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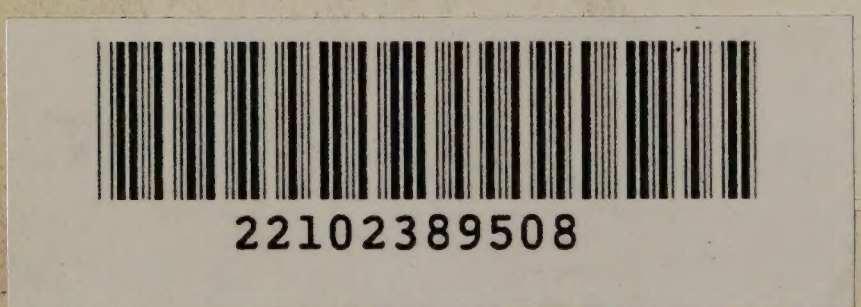
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THE DUBLIN

QUARTERLY JOURNAL

OF

MEDICAL SCIENCE;

CONSISTING OF

ORIGINAL COMMUNICATIONS,

REVIEWS, RETROSPECTS, AND REPORTS,

INCLUDING THE

LATEST DISCOVERIES IN MEDICINE, SURGERY, AND THE COLLATERAL SCIENCES.

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NOTICES TO CORRESPONDENTS.

THE Publishers of the DUBLIN QUARTERLY JOURNAL OF MEDICAL SCIENCE beg to announce, that, in consequence of the resignation of MR. WILDE, the Editorship of it has been intrusted to DR. NELIGAN, under whose management the present Number is issued.

Communications have been received from Dr. Andrews, Vice-President of the Queen's College, Belfast; Professor Hargrave; Mr. Hamilton; Dr. James S. Hughes; and Dr. Faussett, Clontarf; which shall appear in our next Number.

We have resumed the publication of the Proceedings of the Pathological Society of Dublin; they will for the future be continued regularly. We also intend to publish the Proceedings of the Pathological Societies of Cork and Belfast.

The promised Portrait and Biography of the late Mr. Carmichael, which, from unavoidable circumstances, have been delayed, shall appear in our May Number.

Our exchange French and Belgian Periodicals, and Books for Review, if sent to Messrs. Dulau and Co., care of M. Hector Bossange and Co., Quai Voltaire, Paris, under cover to our Publishers, will reach us free of expense.

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BOOKS AND PERIODICALS RECEIVED.

1. Annuaire de Médecine et Chirurgie Pratiques, pour 1850. Résumé des Travaux pratiques les plus importants publiés en France et à l'Etranger, pendant l'Année 1849. Par le Dr. A. Wahu. Paris: Baillière, 1850. 24mo. pp. 308.

2. Annuaire de Thérapeutique, de Matière Médicale, de Pharmacie, et de Toxicologie, pour 1850. Par M. Bouchardat. Paris: Baillière, 1850. 24mo. pp. 312.

3. Report of the Dublin Sanitary Association on the Public Health Bill, and on the Nuisance Removal and Disease Prevention Act for Ireland. Dublin: McGlashan, 1850. Pamphlet, pp. 12.

4. Analysis of the Evidence given before the Select Committee upon the Slave Trade. By a Barrister. London: Partridge and Oakley, 1850. Pamphlet, pp. 132.

5. Service Pipes for Water. An Investigation made at the Suggestion of the Board of Consulting Physicians of Boston. By E. N. Horsford, Rumford Professor in the University of Cambridge. Cambridge, Massachusets. Metcalf and Co., 1849. Pamphlet, pp. 48.

6. Medical Topography of Queenstown; being an Examination into the Climate and the Influence it exercises on Disease, especially Pulmonary; with some Notices of the Natural History of the Locality. By David H. Scott, M. D., M. R. C. S., &c. Cork: Bradford and Co., 1849. Post 8vo. pp. 102.

7. Sketches of the Medical Topography and Native Diseases of the Gulf of Guinea, Western Africa. By William F. Daniell, M. D., Assistant Surgeon to the Forces, &c. London: Highley, 1849. 8vo. pp. 200.

8. An Inquiry how far Consumption is curable; with Observations on the Treatment, and Cases illustrating the Efficacy of Cod Liver Oil. By James Turnbull, M. D., Physician to the Liverpool Infirmary. London: Churchill. Pamphlet, pp. 21.

9. The Cyclopædia of Anatomy and Physiology. Edited by Robert B. Todd, M. D., F. R. S., &c. London: Longmans, 1850. Part XXXVIII. "Teeth" to "Thorax."

10. Tenth Annual Report of the Crichton Royal Institution for Lunatics. Dumfries, 1849. Pamphlet, pp. 46.

11. The Pathology of the Kidney in Scarlatina, illustrated by Cases. By James Miller, M. D., &c., Physician to the Western General Dispensary, Lisson Grove. London: Boone, 1850. 8vo. pp. 177.

12. The Transactions of the American Medical Association, instituted 1847. Vol. II. Philadelphia: Printed for the Association, by J. K. and P. Y. Collins, 1849. 8vo. pp. 956.

13. Hastings, considered as a Resort for Invalids; with Tables illustrative of its Temperature, Salubrity, and the general Character of the Climate, showing its Suitability in Pulmonary and other Diseases; also Directions for the Choice of Residence, and Hints as to Diet, Regimen, &c. By James Mackness, M. D., Consulting Physician to the Hastings Dispensary. London: Churchill, 1850. Second Edition. 12mo. pp. 187.

14. Memoir on Turning, as an Alternative for Craniotomy and the Long Forceps in Deformity of the Brim of the Pelvis, &c. By J. Y. Simpson, M. D., F. R. S. E., Professor of Midwifery in the University of Edinburgh, &c. (From the Provincial Medical and Surgical Journal.) Pamphlet, royal 8vo. pp. 43.

15. The Natural History of Ireland. Vol. II. Birds. Comprising the Orders Rasores and Grallatores. By William Thompson, Esq., President of the Natural and Philosophical Society of Belfast, &c. London: Reeve and Benham, 1850. 8vo. pp. 350.

16. Some Account of the last Yellow Fever Epidemic of British Guiana. By Daniel Blair, M. D., Surgeon-General of British Guiana. Edited by John Davy, F. R. S., Inspector-General of Army Hospitals, &c. With coloured Plates. London: Longmans, 1850. 8vo. pp. 161.

17. The Hunterian Oration for 1850. By Frederick C. Skey, F. R. S., &c. London: Churchill, 1850. 8vo. pp. 44.

18. Outlines of Medical Proof. Revised and corrected; with Remarks on its Application to certain Forms of irregular Medicine. By Thomas Mayo, M. D., F. R. S. London: Longmans, 1850. Pamphlet, pp. 84.

19. The Chrono-Thermalist; or, People's Medical Inquirer. No. I. London: Gilpin, March, 1850.

20. Statistics of Cholera. By Assistant-Surgeon Edward Balfour, of the Madras Army, in charge of the Right Hon. the Governor's Body Guard. Madras: Pharoah and Co., Atheneum Press, 1849. Post 8vo. pp. 70. (Presented by Order of the Court of Directors of the East India Company.)

21. Inaugural Address, delivered at the Opening of the Queen's College, Belfast, 20th December, 1849. By the President. Published at the request of the Council of the College. Dublin: Thom, 1850. Pamphlet, pp. 30.

22. A Treatise on the Climate and Meteorology of Madeira. By the late J. A. Mason, M. D., Inventor of Mason's Hygrometer. Edited by James Sheridan Knowles; to which are attached, a Review of the State of Agriculture and of the Tenure of Land, by George Peacock, F. R. S., Dean of Ely, &c.; and an Historical and Descriptive Account of the Island, and Guide to Visitors, by John Driver, Consul for Greece, Madeira. London: Churchill, 1850. 8vo. pp. 388.

23. Abstract of the Proceedings of the Obstetrical Society of Edinburgh, for 1848–1849. Session VIII. Edinburgh: Sutherland and Knox, 1850. Pamphlet, pp. 27.

24. Pathology of the Human Eye. By John Dalrymple, F. R. C. S. London: Churchill, 1850. Fasciculus IV.

25. Surgical Anatomy. By Joseph Maclise, Surgeon. London: Churchill, 1850. Fasciculus V.

26. An Appeal to the Public in behalf of an Hospital for Sick Children. London, 1850. Pamphlet, pp. 16.

27. An Inaugural Address, delivered at the Opening of the Dublin Students' Medico-Chirurgical Society, on Wednesday, January 9, 1850. By Robert Murray, President. Dublin: Browne and Nolan, 1850. Pamphlet, pp. 14.

28. The Treatment of Secondary, Constitutional, and Confirmed Syphilis, by a safe and successful Method; with numerous Cases and Clinical Observations, illustrating its Efficacy and Mode of Application in the more obstinate and complicated Forms of the Disease. By Langston Parker, Surgeon to the Queen's Hospital, Birmingham, &c. London: Churchill, 1850. 12mo. pp. 112.

29 The Druggist's General Receipt Book; comprising a copious Veterinary Formula, and Table of Veterinary Materia Medica; numerous Recipes in Patent and Proprietary Medicines, Druggists' Nostrums, &c.; Factitious Mineral Waters, and Powders for preparing them; Perfumery and Cosmetics; Beverages, Dietetic Articles, and Condiments; Trade Chemicals; Miscellaneous Compounds used in the Arts, Domestic Economy, &c.; Useful Tables and Memoranda. By Henry Beasley. London: Churchill, 1850. pp. 424.

30. London Medical Examiner, Monthly Review, and Statistical Journal of Practical Medicine. London: Palmer and Son, 1850. Nos. 1 and 2.

31. Cholera. Its Causes, Symptoms, and Treatment, considered and explained. By P. Batchelder, M. D., of New York City. New York: Dewitt and Davenport, 1849. Pamphlet, pp. 45.

32. Descriptive Catalogue of Works in Science and General Literature. Published by Taylor, Walton, and Maberly. London: 1850. 4to. pp. 24.

33. An Introductory Lecture, delivered at the Massachusetts Medical College, November 6th, 1849. By H. J. Bigelow, M. D., Professor of Surgery in Harvard University, Boston, U. S. Mussey and Co. 1850. Pamphlet, pp. 52.

34. The British Journal of Homœopathy. London: Highley, April, 1850. No. XXXII.

35. Thérapeutique des Rétrécissements de l'Urètre, des Engorgements de la Prostate, et des Obstacles a la Miction existant au Col de la Vessie. Par le Dr. Leroy-d'Etiolles. Paris: Baillière, 1849. 8vo. pp. 86.

36. De l'Action des Préparations d'Or sur notre Èconomie, et plus spécialement sur les Organes de la Digestion et de la Nutrition. Par le Dr. A. Legrand. Paris: Baillière, 1849. 8vo. pp. 31.

37. Du Microscope et des Injections dans leur Applications a l'Anatomie et a la Pathologie, suivi d'une Classification des Sciences Fondamentales de Celle, de la Biologie, et de l'Anatomie en particulier. Par le Dr. Ch. Robin. Paris: Baillière, 1849. 8vo. pp. 196. Avec 23 figures intercalées dans le texte et 4 planches gravées.

38. Mesmerism tried by the Touchstone of Truth, being a Reply to Dr. Ashburner's Remarks on Phrenology, Mesmerism, and Clairvoyance. By George Corfe, of Middlesex Hospital. London: Houlston and Stoneman, 1848. Pamphlet, pp. 44.

39. On the Causes, Nature, and Treatment of Palsy and Apoplexy; of the Forms, Seats, Complications, and Morbid Revelations of Paralytic and

Apoplectic Diseases. By James Copland, M. D., &c. London: Longmans. Post 8vo. pp. 414.

40. Pathological Researches on Death from Suffocation and from Syncope; and on Vital and Post Mortem Burning. Suggested by the Case of the alleged Bridgnorth Matricide. By Samuel Wright, M. D., &c., Birmingham. London: Churchill, 1850. 4to. pp. 34; with three Plates.

41. On Diseases of Menstruation and Ovarian Inflammation, in connexion with Sterility, Pelvic Tumours, and Affections of the Womb. By Edward John Tilt, M. D., &c. London: Churchill, 1850. Post 8vo. pp. 250.

42. Dictionnaire des Altérations et Falsifications des Substances Alimentaires, Médicamenteuses et Commerciales. Avec l'Indication des Moyens de les Reconnaitre. Par M. A. Chevallier. Paris: Bechet, Jeune, 1850. Tome premier. 8vo. pp. 480.

BOOKS AND PERIODICALS WITH WHICH THE DUBLIN QUARTERLY JOURNAL IS EXCHANGED.

1. The British and Foreign Medico-Chirurgical Review and Journal of Practical Medicine. London: Highley. (Recd. No. 10.)

2. The Edinburgh Medical and Surgical Journal; exhibiting a concise View of the latest and most important Discoveries in Medicine, Surgery, and Pharmacy. Edinburgh: Black. (Recd. Nos. 182 and 183.)

3. Transactions of the Medical Society of London. London.

4. The Transactions of the Provincial Medical and Surgical Association. London: Churchill.

5. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co.

6. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Edited by W. H. Ranking, M. D. London: Churchill. (Recd. Vol. X.)

7. Guy's Hospital Reports. London: Highley.

8. Pharmaceutical Journal and Transactions. London. Edited by Jacob Bell. (Recd. regularly.)

9. The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science. Conducted by Sir David Brewster, Richard Taylor, Richard Phillips, and Sir Robert Kane. London: Taylor. (Recd. regularly.)

10. Monthly Journal of Medical Science. Edinburgh: Sutherland and Knox. (Recd. regularly.)

11. The Chemist, a Monthly Journal of Chemical Philosophy and of Chemistry. Edited by C. and J. Watt. London: Eicke. (Recd. Nos. 1 to 5.)

12. London Medical Gazette, or Journal of Practical Medicine. London: Longmans. (Recd. regularly.)

13. The Medical Times. London: John Churchill. (Recd. regularly.)

14. Provincial Medical and Surgical Journal. Edited by W. H. Ranking, M. D., and J. H. Walsh, F. R. C. S. E. London: Churchill. Worcester: Deighton and Co. (Recd. regularly.)

15. London Journal of Medicine, a Monthly Record of the Medical Sciences. London: Taylor, Walton, and Maberly. (Recd. regularly.)

16. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. London: Churchill. (Recd. No. 10.)

17. Annals of Anatomy and Physiology. Conducted by John Goodsir, F. R. S. Edinburgh: Sutherland and Knox. (Recd. No. I.)

18. The Athenæum—Journal of English and Foreign Literature, Science, &c. London. (Recd. regularly.)

19. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D. Philadelphia: Lea and Blanchard. (Recd. No. 37.)

20. The Medical Examiner and Record of Medical Science. Edited by F. G. Smith, M. D., and D. H. Tucker, M. D. Philadelphia: Lindsay and Blakiston.

21. The New York Journal of Medicine and the Collateral Sciences. New York: Fanshaw.

22. The American Journal of Science and Arts; conducted by Professors Silliman and B. Silliman, Jun., and J. D. Dana. New Haven. (Recd. Nos. 25 and 26.)

23. The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by J. Carson, M. D., and R. Bridges, M. D. Philadelphia: Merrishow and Thompson.

24. The American Journal of Insanity. Edited by the Officers of the New York State Lunatic Asylum, Utica.

25. The British American Journal of Medical and Physical Science. Montreal. (Recd. regularly.)

26. The American Journal and Library of Dental Science. Published under the auspices of the American Society of Dental Surgeons.

27. The Boston Medical and Surgical Journal. Edited by J. V. C. Smith, M. D. Boston: Clapp.

28. Gazette Médicale de Paris. Paris. (Recd. regularly.)

29. Gazette Médico-Chirurgicale de Paris. Paris.

30. Annales d'Oculistique, publieés par le Dr. Florent Cunier, Bruxelles.

31. Journal de Chimie Médicale, de Pharmacie, de Toxicologie, et Revue des nouvelles, scientifiques, nationales et étrangères, &c. Paris: Labé. (Recd. regularly.)

32. Journal de Pharmacie et de Chimie, &c. Paris: Victor Masson. (Recd. regularly).

33. L'Union Médicale, Journal des intérêts scientifiques et pratiques, moraux et professionels du Corps médical. Paris. (Recd. regularly.)

34. La Lancette Française, Gazette des Hôpitaux civils et militaires. Paris. (Recd. regularly.)

35. Revue Médicale Française et étrangère, Journal des Progrès de la médecine hippocratique. Par J. B. Cayol. Paris. (Recd. regularly.)

36. Revue Médico-Chirurgicale de Paris. Sous la Direction de M. Malgaigne. (Recd. regularly.)

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38. Archives générales de Médecine; Journal Complémentaire des Sciences Médicales. Paris: Labé. (Recd. regularly)

39. Bulletin de l'Académie Nationale de Médecine. Paris: Baillière.

40. Journal des Connaissances Médico-Chirurgicales. Paris: Dr. A. Martin Lauzer. (Recd. regularly.)

41. Journal de Médecine et Chirurgie Pratiques a l'Usage des Médecins Praticiens. Par Lucas Champonnière. Paris. (Recd. regularly.)

42. Journal des Connaissances Médicales pratiques et de Pharmacologie Paris. (Recd. regularly.)

43. Annales Médico-Psychologiques. Par MM. Baillarger, Brierre de Boismont, et Cerise. Paris: Victor Masson. (Recd. regularly.)

44. Bulletin Général de Thérapeutique, Médicale et Chirurgicale. Recueil Pratique Publié par le Docteur Debout. Paris. (Recd. regularly.)

45. Annales de la Société de Médecine Pratique de la Province d'Anvers (établie à Willebroeck). Boom.

46. Bulletin des Travaux de la Société Médico-Pratique de Paris.

47. Zeitschrift für die gesammte Medicin mit besonderer Rücksicht auf Hospitalpraxis und ausländische Literatur. Von Dr. F. W. Oppenheim. Hamburg. (Recd. Vol. XLI. Part iv. and Vol. XLII. Parts i. ii. iii.)

48. Notizen aus dem Gebiete der Natur-und Heilkunde, gesammelt und mitgetheilt von M. J. Schleiden und Dr. R. Froriep. Weimar. (Recd. Vol. X. Nos. 2 to 22, and Vol. XI. No. 1.)

49. Zeitschrift der K. K. Gesellschaft der Aerzte zu Wien—Redakteur Dr. Karl Haller. Wien.

50. Zeitschrift für rationelle Medicin; herausgegeben Von Dr. J. Henle und Dr. C. Pfeufer, Professoren der Medicin an der Universität zu Heidelberg. (Recd. Vol. VIII. Parts i. and ii.)

51. Medecinische Jahrbücher des Kaiserlicho Königlichen Oesterreichischen Staats. Wien.

52. Oesterreichische Medecinische Wochenschrift als Ergänzungsblatt der Medicinischen Jährbücher, &c.

53. Journal für Chirurgie und Augenheilkunde herausgegeben von Dr. P. von Walther und Dr. T. A. von Ammon. Berlin.

54. Virteljahrschrift für die praktische Heilkunde. Prag. Borrosch und André.

55. Forum fur Medizinal Angelegenheiten. Prag. Borrosch und André.

56. Jahresbericht über die Fortschritte der gesammten Medicin in allen Ländern. Herausgegeben von Dr. Canstatt und Dr. Eisenmann. Erlangen: Ferdinand Enke. (Recd. Parts i. to vii. for 1848.)

57. Bibliothek for Læger, Tredie Række. Udgivet af Direktionen for de classenske Literaturselskab. Redigeret af H. Selmer. Kjobenhavn.

58. Norsk Magazin, for Lægevidenskaben, udgivet af Lægeforeningen Christiana. Redigeret af Faye, W. Boeck, Lund, Voss, A. W. Münster, Christiana, Feilberg, und Landmark.

59. Hygiea, Medicinsk och Pharmaceutis Månads-Skrift. Stockholm: Fritze. (Recd. Vol. XI. Nos. 4, 5, 6.)

60. Gazetta Medica Lombarda. Diretta dal Prof. Panizza. Formerly the Gazetta Medica di Milano. Milan.

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NOTICES TO CORRESPONDENTS.

COMMUNICATIONS have been received from Professor Beatty, Dr. M. H. Collis, Dr. Battersby, and Dr. Popham, Cork.

Being anxious to lay before our readers a full resumé of the present state of knowledge on Cod Liver Oil, we have devoted so large a portion of our pages to the review of works on this Medicine, that we have been obliged to postpone until our next Number some Reviews and Pathological Reports which are in type.

Owing to an accident which occurred in the process of engraving the Portrait of the late Mr. Carmichael, which is being executed by Messrs. Finden of London, it could not be finished in time for our present Publication; it will be given with our Number for August, and our Subscribers are requested not to get this Volume bound until then.

As we had received the Names of some Subscribers too late for Publication in our Annual List in February last, we publish them in our present Number.

Our American exchanges have been, with few exceptions, very irregular latterly. We shall be obliged to such of the Editors as wish to have their Journals continued on our Exchange List, to communicate with us by letter, directed to "The Editor of the Dublin Quarterly Journal of Medical Science," care of Messrs. Hodges and Smith, Grafton-street, Dublin.

THE DUBLIN

QUARTERLY JOURNAL

OF

MEDICAL SCIENCE.

FEBRUARY 1, 1850.

PART I.

ORIGINAL COMMUNICATIONS.

ART. I.—*Clinical Researches on Gangrene of the Lung.* By WILLIAM STOKES, M. D., Regius Professor of Physic in the University of Dublin.

UNDER the term gangrene may be included all cases in which a putrefactive process, accompanied by death of a portion of the lung, takes place. The disease is met with in the acute and chronic forms, and also in that of continually recurring acute attacks: it may be a primary idiopathic affection, or arise in the course of some constitutional disease, or be the result of a previous acute or chronic disease within the chest. Under whatever form it occurs, it is one of the most terrible and unmanageable of the diseases of the lungs.

The following are some of the forms of this disease:

1. A gangrenous eschar rapidly produced from causes which, under ordinary circumstances, would cause simple pneumonia or pleurisy.

2. Gangrene of the lung occurring as a consequence of diffuse or erysipelatous inflammation.

3. Arising from long exposure of the surface to cold.

4. Occurring in the consolidation of the lung observed in bad cases of typhus fever.

5. Induced by contused injuries of the chest.

6. Repeated distinct attacks of acute gangrenous disease, with severe symptoms of irritation and high fever. The attacks, with the exception of the first, not having any apparent exciting cause, and continuing to recur for a great length of time.

7. Chronic gangrenous cavity with great diminution of volume.

8. Recent sphacelus of one lung supervening on a chronic gangrene of the opposite lung.

9. The result of pressure of the nutrient vessels and nerves of the lung by aneurismal or cancerous tumours.

There are other forms of the affection, but the above are those which have come under my observation.

The general symptoms have a close similarity in the various forms of the affection, consisting in cough, with an extreme and perfectly peculiar fetor of the breath. There is generally copious expectoration of a sanious or muco-purulent character; but neither with this nor with the breath is the fetor constantly associated, for it is found to appear and to subside in singularly short spaces of time. This fetor is of all stenches the most terrible. It is commonly perceived during a fit of coughing, and appears to be produced rapidly by the use of stimulating food or drinks. It may subside for a great length of time, and be again produced without our being able to explain the cause of its re-appearance. The system seems to suffer from the effects of a septic poison, and a weakened and leuco-phlegmatic condition is observed in most of the chronic cases of the disease.

We would, however, fall into error if we were to consider all cases of cough, with fetid breath and expectoration, as

cases of true gangrene of the lung. Dr. Graves has shown that these symptoms may come on in chronic bronchitis(*a*). Dr. Williams describes cases of fetid abscess of the lung with recovery, a disease which I have also observed in the pneumonia following measles. I have more than once observed a distinct gangrenous odour on the breath of a lady who had recently suffered from slight bronchial hemorrhage. And in cases where an empyema opens through the lung the discharge has sometimes an extreme degree of fetor. In such cases there is no sphacelus of the tissues, and we have only putrefaction of a secreted fluid occurring after it has occupied its containing cavity.

We may here pause, even at the risk of digression, to inquire, why it is that this change does not more often occur, both in bronchial effusions and also in the fluid contents of an empyema? In the case of an empyema with closed sac, we may presume that the want of contact with air is the cause of absence of putrefaction; but in copious bronchial effusions, in the fluid contents of open tuberculous abscesses, and, above all, in the case of empyema and pneumothorax with pulmonary fistula, the preservation from a septic state of the secreted matters is one of the most singular of pathological phenomena.

In the case of empyema with pulmonary fistula we may have many pints of a highly animalized fluid, mixed with floating fragments and shreds of lymph, kept at a high temperature and in contact with atmospheric air, which is more or less renewed at every inspiration. And yet this fluid remains for months, or even more than a year, without putrefying; when, if it were withdrawn and kept at the same temperature and in contact with air outside the body, it would run rapidly into decomposition. We can only explain this by assuming that actual organic connexion is unnecessary for a certain degree of inherent vitality, or that there is a vital irra-

(*a*) Clinical Medicine, 2nd ed., vol. ii. p. 52.

diation from surrounding parts. The organization of effused lymph, and its transformation into fat, or cancerous or bony structures, seem to favour these views.

It is many years since I saw a case which, as bearing on these points, is worthy to be placed on record. A gentleman past middle age had for some months laboured under the ordinary form of tuberculous phthisis. In the course of some months empyema and pneumothorax with fistula occurred with the usual symptoms, and he remained for a great length of time with the usual symptoms and signs of this condition: there were no evidences of putrefaction. The liquid effusion slowly increased until the pressure was so great as to cause extreme distress, and the operation of paracentesis was performed by Mr. Porter, merely as a palliative measure. As is usual, however, in such cases, there was but little relief given. The fluid drawn off was of the ordinary sero-purulent tint, and had not the slightest unpleasant odour. The liquid effusion again accumulated, and a fluctuating tumour appeared at the situation of the cicatrix of the puncture. This was opened by a lancet, and a great quantity of matter given exit to, still free from fetor. Soon after this the patient complained of great internal distress; his strength rapidly sank, he began to cough up fetid matter, and his breath had an intense gangrenous stench. He died in a few days after the second operation. On dissection a quantity of dark-coloured and putrid fluid was found in the pleural cavity; the serous membrane had passed into a state of universal sphacelus, and hung in blackened shreds; the periosteum was also mortified, and the ribs appeared in a state of necrosis. The fistula was easily found, passing into a tuberculous cavern in the antero-superior portion of the lung.

It would appear that, in this case, gangrenous action spread from the wound to the pleura, which was then deprived of its vitality; and, consequently, the fluid in the cavity passed rapidly into putrefaction. We cannot suppose that this change

was produced by the admission of air, as, for many months before the operations, air had been freely entering through the pulmonary fistula.

I formerly entertained the opinion that this disease was most frequently met with in persons addicted to the abuse of spirituous liquors; but I have since seen many instances where it occurred in the most temperate individuals. I have not met with any examples of the disease in the child.

One of the most singular and not unfrequent characters of the disease is the extreme severity of the pain which attends its invasion. We observe this not only in patients who have experienced but a single attack, but in another form, which I shall just now describe, and which I have noticed as the ninth in the catalogue of forms of this disease, given at the commencement of this paper. This pain is more severe than that in ordinary acute pleuritis, and the extent of serous inflammation is by no means commensurate with the amount of suffering. In the recurrent form of the affection, I have seen each attack accompanied by this agonizing pain, and this at a time when the patient was reduced to almost the last stage of exhaustion.

In my work on diseases of the chest I have noticed some forms of gangrene of the lung. Since then I have met with several cases presenting the disease under new conditions, which may be described as follows :

I. Gangrenous eschar, in typhoid pneumonia.
II. Circumscribed sphacelus, in cases of diffuse inflammation.
III. Chronic gangrene, producing dexiocardia.
IV. Frequently recurring attacks of gangrenous disease of the lung.

Of the first of these my friend Dr. Hudson has given a good example, which was observed in our wards, and I therefore need not here do more than refer to his paper(*a*). The second form may be illustrated by the following case:

(*a*) On Typhoid Pneumonia. Dublin Journal, First Series, vol. vii., p. 372.

A young female was attacked with a low form of spreading erysipelas, which extended from the legs upwards to the trunk; the respiration became impeded, and the right lung soon presented the signs of consolidation in its posterior and inferior portions, without the usual signs of progressive pneumonia. Bronchial effusion soon set in, and the patient sank. There was but little pain, nor was there ever fetor of breath or expectoration. On dissection, the lower lobe of the right lung was found solid, of a yellowish-gray colour, soft, impermeable, leaving a smooth surface under the scalpel, from which a sero-purulent fluid could be expressed. Within about an inch of the outer surface, and towards the lower portion, we found a cavity completely filled with sanious pus, having the most extreme fetor. There was no bronchial communication, nor any air in the cavity, the sides of which were formed by the condensed lung, and presented a broken and shreddy surface. This cavity was well-defined, and could have contained a large walnut.

This case is of importance, as exhibiting a true gangrenous cavity, although there was no communication with the external air.

Gangrenous Cavity in the upper Portion of the right Lung, with Dexiocardia from the diminished volume of the organ.

I have met with but one example of this hitherto undescribed form. The patient was an old man, who had for many months laboured under cough, emaciation, and fetid expectoration. He presented, on admission to hospital, the ordinary signs of a circumscribed cavity below the right clavicle; gurgling and cavernous respiration being distinct. The heart was found pulsating to the right of the sternum; and though its action was feeble, there was no difficulty in recognising it, owing to the emaciation of the patient. On dissection, a gangrenous cavity, nearly the size of a goose-egg, was found in the supero-anterior portion of the upper lobe, communicating with the bronchial tubes, and exhaling an abominable odour.

There was another appearance which I had never before seen. We found, scattered over the anterior surface of the lung, superficial sloughs between the lung and pleura, not communicating with the bronchial tubes. They were about a third of an inch in depth, and about an inch in length; their form, an elongated oval. In one of these, the blood-vessels, still pervious, were found to traverse the cavity; while in another, which lay on the anterior face of the middle lobe, a large mass of nearly detached and putrid cellular structure was discovered. On the side, the superficial eschars resembled at first view the ordinary markings of the ribs on the lung. The heart lay completely to the right of the mesian line.

We may then add gangrene of the lung to the list of causes of dexiocardia from diminished volume of the right lung.

Frequently recurring Attacks of local Gangrenous Disease, accompanied on each Occasion by severe constitutional Disturbance.

Of this extraordinary form I have seen two well-marked examples; and I am not aware that its symptoms and history have as yet been described in any work on pulmonary diseases. In one instance, which occurred in a female of middle age, the disease proved fatal after a continuance of many months. The other example was in the case of a young man who, after a long struggle with the affection, seemed to have recovered perfectly. He left this country, and remained in the South of Europe, free, as I understand, from any symptoms of his former malady; but was attacked in the ensuing summer with symptoms of acute pneumonia, under which he sank.

This form of the disease may be described as consisting in a succession of distinct attacks, with high fever and general constitutional disturbance, followed by copious expectoration, which exhales the most intense fetor, with or without blood. The breath becomes fetid, and the patient's condition, during, as it were, the paroxysm of the disease, is distressing in the highest degree. In both these cases intervals of apparently

complete recovery were observed. The pulse, which had presented all the characters of inflammatory fever, would become tranquil, the respiration quiet, the cough would almost wholly subside, and the appearance of the patient improve so much as to lead to the belief of perfect recovery; when another attack, like that which had preceded it, would set in, and run a course precisely similar to that of the last invasion of the disease. The physical phenomena in both these cases were in the early stage of the disease singularly obscure, and, in their character and extent, quite incommensurate with the violence of the symptoms, and the severity and danger of the disease. To this subject I shall recur.

The first case was that of a lady, past thirty-five years of age. She had never before been subject to pulmonary disease, when, after a long exposure to a cold sea-fog, she was attacked with symptoms of bronchitis, accompanied by the sensation of pain and oppression referable to the lower portion of the left side. Within a week of the attack she expectorated some fetid matter, after which she appeared to improve. She bore a long journey to Dublin without any inconvenience, and I saw her within a month of her recovery from the first attack. Her circulation was then tranquil, her cough very trifling, with mucous expectoration, which was free from any fetor, as was also her breath; in fact, she had no appearance of disease, beyond the slightest possible cachectic hue. The chest sounded everywhere perfectly clear, and there was no stethoscopic indication of disease beyond a slight and diffused mucous rattle in the inferior portion of the left lung, which was clear on percussion. She appeared to improve for about a fortnight, when, without any apparent exciting cause, she was attacked with most agonizing pain in the situation first affected. The pulse became full, rapid, and resisting; the skin burning hot; the cough constant; the breath extremely fetid; and she expectorated great quantities of muco-purulent fluid, often tinged with blood, and exhaling the most extreme fetor. Not-

withstanding the violence of the symptoms, physical examination gave but slight results; there were no signs of dry pleurisy, no appreciable dulness, and the only change was an increase in the amount of the mucous rattle. The symptoms continued with great severity for about a week, and then subsided; moderate local bleeding, and opiates, being the principal means employed. She had then an interval of ease and apparent recovery, when another attack succeeded, precisely similar in every character to its predecessor. This attack came on without any apparent exciting cause, and thus the disease continued for many months; the attacks slightly varying in severity, but agreeing in the general characters of agonizing pain, high fever, and fetid expectoration. No treatment that was adopted seemed in the least to control the disease; yet, in its intervals, the patient continued able to use nourishment, to sleep well, and to take equestrian exercise. The intervals of the attacks became less, and a permanently febrile state was established, notwithstanding which the remittent character of the local disease continued manifest. I have never witnessed more acute suffering from mere pain than this lady experienced during each attack of this terrible disease; and yet it was not till within two or three months of her death that any important change in the condition of the lung could be detected. The lowest portion became gradually dull; and this change advanced upwards with extreme slowness. The mucous râle gradually passed into obscure gurgling, but it was not until within a few weeks of the patient's death that signs of a cavern were established. The attacks continued with unmitigated violence up to a period not more than a few days before death, and the sufferings from the pain were, if possible, greater as the patient's strength gave way.

At no time did physical examination indicate disease over a space of more than about four fingers in breadth and three in depth in the postero-inferior portion of the lung.

There was no *post mortem* examination.

In the second case the exciting cause was also a long exposure to cold, but under different circumstances. The patient, a young man of fair complexion and soft fibre, while bathing in the sea on a cold and windy day, was carried to a considerable distance from shore by a tide-current; and it is believed that he was nearly an hour in the water before he reached a landing-place, when, as might be expected, he was in a state of extreme exhaustion and collapse. He remained in a weak state for some days, with a slight cough, and then suddenly expectorated some fetid matter. The disease in this case ran a course very similar to that in the former instance, except that it was not accompanied by the extreme and unaccountable pain, and that almost every attack of the fever and fetid expectoration was accompanied by hemoptysis. Like the first case, there were the singular intermissions, with complete absence of fetor, and apparent return to health, and the attacks would come on without any exciting cause. It also presented the singular want of coincidence between the symptoms and physical signs. At first, indeed, there were evidences of a congested state of the lower lobe, but these soon subsided, and then for many months the physical phenomena remained almost perfectly normal, except that during the attacks a sonoro-mucous rattle was developed in the lower portion of the lung. The attacks gradually lessened in severity, and occurred at longer intervals, and, after a period of about five months, the patient was so far recovered as to be able to leave this country for the south of Europe. He regained his strength and appearance during a winter passed in Rome, but, as I before stated, died of pneumonia, as was reported in the ensuing summer.

I am anxious here to draw attention to a circumstance of very great importance in practice; namely, the singular obscurity of physical signs in the earlier periods of this disease. This was exemplified in the two cases which have been just now given; and I have had examples of the same difficulty in many other instances.

From considering all the facts of these cases it appears very probable that in the earlier periods of this disease there is no solution of continuity, nor much consolidation of the lung. This, of course, does not apply to that form described by Dr. Graves, where a lung previously hepatized from pneumonia takes on a gangrenous action; a most important variety, which we shall presently examine. Nor is it applicable to some of the cases of hemoptysical gangrene, established by Dr. Law. But in many of the cases of gangrene occurring in a lung not previously diseased, or in what may be termed *primary gangrene*, we see the disproportion between the existing physical signs, and the violence and importance of the disease, in a very remarkable degree.

Is this a disease *commencing in points*, with intervening healthy tissue? If it were so we should expect to meet all the difficulties which attend the detection of analogous changes, such as the first stage of tubercle or isolated cancers. Yet there must be something more, for the great phenomena of the disease are high febrile reaction and copious secretion of a fetid matter. I am of opinion that the portion of the organ which suffers death must be at first very insignificant, but that the surface which secretes the putrid fluid is extensive. It seems almost certain, too, that this fluid is originally poured out in a putrid condition, and the disease at first is essentially one of secretion.

Professor Wood, of Philadelphia, in his Treatise on the Practice of Medicine, states, that after the expectoration of fetid matter, a cavity must be held to have formed, and that we can detect it by the usual means. My experience leads me to an opposite opinion on both these points. I have known the expectoration of putrid matter to occur within so short a time after the operation of the exciting cause as thirty-six or forty-eight hours, that it is difficult to conceive the formation of a cavity so rapidly; and I repeat that months may

elapse with the best-marked symptoms, and yet no physical sign of a cavity be discoverable.

From what has been stated we thus draw one practical conclusion. It is, *that in any case where a sudden fetid expectoration has occurred, we are not justified in pronouncing the lungs healthy, or the patient in a safe position, because physical examination, even the most accurate, fails to detect disease.*

This aphorism I would most earnestly impress on the minds of all who may have to deal with cases of this description.

This peculiarity in many cases of gangrene of the lung did not escape Laennec. In speaking of the physical signs he says: "I have been several times assured that the crepitous ronchus did not exist until after the production of the eschar, thereby indicating the formation of the inflammatory circle, which was to operate its detachment." He further observes, that "the invasion is usually characterized by symptoms of slight pneumonia; but this is attended by a degree of prostration of strength, or anxiety quite disproportioned to the severity of the local symptoms, and to the small extent of space over which the respiratory murmur and sound on percussion are wanting." I quote from Forbes's Translation.

Of the two next forms of gangrene which I shall notice here, I have not myself met any example. In the first, which has been described by Dr. Graves, gangrenous action seizes on a lung which had been for some weeks previously in a state of unresolved hepatization; while, in the form described by Dr. Law, the putrefaction of the effused blood in pulmonary apoplexy appears to be the first cause of the disease.

Of gangrene attacking hepatized lung, Dr. Graves gives a remarkable instance in his Clinical Medicine(*a*). The patient

(*a*) In his observations on this case Dr. Graves inquires, "How are we to account for this sudden supervention of gangrene? There was nothing in the nature of the gangrenous inflammation to dispose it to terminate in

was an old man who had been attacked with symptoms of pleuro-pneumonia, and was admitted with the usual physical signs of consolidated lung and pneumonia. Under a moderate antiphlogistic treatment, and the use of calomel and opium, the progress of the disease was checked, the pain ceased, and the respiration became less frequent, but still continued at the rate of thirty in a minute, while the stethoscope indicated no tendency to resolution. In this state the patient continued for a week, when he was attacked with symptoms of laryngitis, with copious muco-purulent expectoration. This was speedily followed by extreme prostration, the countenance became sunk and livid, the breath exceedingly fetid, and the expectoration greenish, ichorous, and intolerably fetid. The patient died within forty hours after the commencement of the last attack.

In addition to the gangrene of the lung the posterior surface of the larynx was found destroyed by gangrenous sloughing.

The putrefaction of blood previously effused into the substance of the lung, as in cases of pulmonary apoplexy, has been considered by Dr. Law as constituting an important

this way. It had lasted for three weeks, and had arrived at a stage in which inflammation very rarely assumes the gangrenous character. To what then are we to attribute it? Partly to the debility of the man's constitution, and partly to an erysipelatous tendency in the air, which was at the time prevalent. Except there was something to dispose the lungs to gangrenous disease, as an enfeebled habit and vitiated quality of atmosphere, we could not, under the existing circumstances, have expected such a termination. That this view of the subject is correct, is shown by the simultaneous occurrence of gangrene in another part which had not been previously diseased or subject to inflammation, except shortly before the man's death,—I allude to the larynx.

"What I wish to impress on you is, that though the inflammation of the lungs ended suddenly in gangrene, it was not in consequence of the inflammation having in itself any such tendency, but in consequence of the change produced in the man's constitution by atmospheric influence, and which was favoured by his advanced age and great debility."

variety of pulmonary gangrene. I have not seen any cases of the change from one of these diseases into the other; and I apprehend that the occurrence must be rare. I would say further, that where a clot of blood effused into the lung putrifies, this change is in itself a proof of a gangrenous disposition pre-existing; and I feel satisfied that the hemorrhages in cases of gangrene have no relation to pulmonary apoplexy.

That an effusion of blood into the lung does not more often end in putrefaction of the fluid is certainly an extraordinary fact; but not more so than the rarity of putrefaction in abscesses, tubercular cavities, or empyema and pneumo-thorax. That it is rare, appears from the fact that neither Laennec, nor many other writers on pulmonary apoplexy, mention gangrene as a result of the disease; which, besides, is in many instances connected with disease of the heart, producing either an active or passive congestion of the lung. The production of gangrene, however, seems in no way connected with lesion of the heart. We may also refer to the rarity of putrefaction of bloody effusions in the brain and in other parts of the system, even where the quantity of blood effused is enormous, as in cases of long-existing diffuse aneurisms.

I do not wish to be understood as denying the possibility of the passing of a pulmonary apoplectic clot into putrefaction; but that the accidental putrefaction of blood effused in the lungs is to be reckoned as even an ordinary cause of pulmonary gangrene, I feel great reluctance to admit.

Mr. O'Ferrall, adopting generally the views of Dr. Law, goes a step further, and describes a non-putrefactive gangrene of the sanguineous clot, and also states that the clot may undergo the process of puriform softening; a condition in itself not gangrenous, so far as the clot is concerned, but which may be attended with sloughing of the surrounding tissues. Without denying the accuracy of these observations, I apprehend that Mr. O'Ferrall's distinctions are, perhaps, too finely drawn; and it is, at all events, clear that, in the present state of our know-

ledge, there is no practical benefit to be derived by the attempt to distinguish between the ordinary forms of gangrene, and that in which sloughing of the pulmonary tissue complicates or succeeds to the puriform softening, as described by Mr. O'Ferrall.

The researches of these gentlemen, however, are of great value, as still further corroborating the opinion already announced by Laennec, that gangrene of the lung does not necessarily imply a previously intense inflammation(*a*).

There is a great difficulty in drawing the line between what has been termed fetid abscess of the lung and true gangrene. Are they cases of original gangrenous action, or examples merely of putrefaction of the fluid contents of a pulmonary abscess? Are they examples of gangrenous action speedily formed, and as speedily arrested? for we know that many such cases have eventuated in recovery. Further investigation alone will suffice to clear up these points. With the sudden formation of gangrenous action every practical man is familiar, but its sudden cessation is a circumstance not yet sufficiently recognised; yet we may observe this singular phenomena in certain cases of typhus fever, when the occurrence of local gangrene is manifestly under the operation of a law which regulates the general morbific state arising in the progress of that condition, and suddenly ceasing with its termination.

We may see a patient presenting every day new bed-sores in every part of the body, where even the slightest pressure has been exercised; a condition so apt for the gangrenous state, that the mark of the hand may be imprinted in mortification on the face if the patient has lain but for an hour with the cheek supported by the hand. Every day new cutaneous gangrenes are formed up to a certain period, when, as if this ten-

(*a*) See Dr. Law's paper, Transactions of the Association of the King and Queen's College of Physicians, New Series, vol. i. Also Mr. O'Ferrall's Observations in the Transactions of the Pathological Society, Dublin Journal of Medical Science, First Series, vol. xix. p. 121.

dency, like the other secondary effects of fever, was under a law of periodicity, not only are no new gangrenes produced, but those already formed at once take on a healthy action. May not the same condition occur in local disease of the lung? How many of these diseases, supposed to be idiopathic, are really secondary to an unrecognized morbid state of the entire system.

Practically, however, we may form this conclusion, that, in any case of fetid expectoration, the earlier we discover the physical signs of cavity, or of manifest local disease, preceding the cavity, the better should our prognosis be.

It would be difficult, and, in some cases, perhaps, impossible, to make an accurate diagnosis between fetid abscess of the lung and gangrene; especially, when the case is seen for the first time, and the fetid expectoration established. If the manifest signs of the cavity appear at a very early period of the case, say within a week or ten days of the first invasion of disease, we ought to lean to the more favourable opinion of abscess. It must be remembered, however, that this is the more rare condition, and that, as in the case of typhoid consolidation, a gangrenous eschar may form rapidly, and present the signs of cavity.

An important case, illustrative of these remarks, is given by Dr. Hudson. The patient had been attacked with pneumonic symptoms ten days before he came under observation. The lower lobe of the right lung was solidified, while cavernous respiration and pectoriloquism existed at the angle of the scapula. Next day the breath and expectoration were fetid, and all the signs of a cavity very distinct. In about twenty-four hours the fetor ceased, and the seventh day after his admission to hospital the signs of cavity had disappeared.

We have in this case two circumstances leading to the diagnosis of fetid abscess rather than of true gangrene; first, the early formation of a cavity, and secondly the existence of well-marked physical signs of extensive recent solidification.

Of a similar nature is the example recorded by Dr. Williams in the Cyclopædia of Practical Medicine.

In addition to such cases of fetid abscess there are two other examples of disease which may be mistaken for gangrene of the lung: one the perforation of the pleura by an empyema, and the evacuation of the fluid through the lung; and the other, that which is commonly described as the opening of an hepatic abscess into the bronchial tubes. It does not invariably occur, however, in either of these diseases, that the fluid evacuated is putrid, so that where this character is absent it is not likely that the case would be confounded with gangrene. We only know that in certain cases belonging to either of these categories the patient at some period, either earlier or later in the disease, expectorates for a considerable time a quantity of the most offensive matter, has a fetid breath, and presents symptoms which may be attributed to the presence of a septic poison acting on the economy.

If we compare these two cases with regard to the facility of diagnosis, we shall find much less difficulty in the first than in the second example. Indeed our knowledge as to this last class of cases is still extremely imperfect, as will be seen when we treat of perforations of the lung.

The diagnosis of the first is in general not difficult, and rests upon three considerations:

I. The early symptoms, which are those of pleuritis with effusion.

II. The physical signs observable before the occurrence of any fetid expectoration, which are indicative of a manifest and extensive lesion.

III. The coincidence of the phenomena of pneumo-thorax, complicating those of empyema, coincident with the occurrence of fetid expectoration.

In such cases we are not yet able to say whether the putrescence of the empyematous fluid existed before the perforation of the pleura, or occurred subsequently to the admission of air,

but it appears that in some instances the signs of putrescence have rapidly followed those of the perforation of the pleura.

Of this condition I saw a remarkable instance some years ago. A gentleman aged 23 was attacked with the usual symptoms of pleurisy of the left lung, followed by copious effusion. The disease was violent and obstinate, and no sign of absorption was observed after some weeks of the malady, when the patient began to expectorate copiously a muco-puriform fluid, which speedily became extremely fetid. Soon after this I saw him. The fetor was so intense as to infect the air throughout the whole of a very large house, and the secretion was extremely copious. The lower portion of the left side was dull, while above, and extending nearly to the spine of the scapula, there was tympanic resonance, with amphoric respiration, and metallic tinkling and voice. The weather being warm, the patient suffered extremely from heat, and he was advised in consultation to take the air in an open carriage; but after proceeding a short distance from his house, he was literally driven back by the swarms of flies, which, attracted by the odour, settled in myriads on his person and his carriage. This patient, to the surprise of all around him, ultimately recovered, but with the greatest amount of contraction of the side that I have ever witnessed, the left shoulder being depressed to between two and three inches.

This case occurred about ten years ago, and the gentleman has enjoyed excellent health during that period.

Our knowledge of the second class of cases is still so limited that we can do little more than indicate their general character. A patient suffers, or is supposed to suffer from acute hepatitis, followed by constitutional symptoms indicating suppuration. After a time he begins to expectorate purulent matter, which may or may not be putrid. These cases have been hitherto supposed to be examples of perforation of the diaphragm and lung, and direct evacuation of the hepatic pus; but there is reason to doubt the existence of this triple lesion

in many instances, and it seems probable that we may often refer the phenomena to vicarious secretion, independent of any solution of continuity. In such a case, no matter how great the fetor, we should be extremely slow in assuming the existence of a pulmonary gangrene.

The attention of the physician in such cases should be directed to the following points:

I. The pre-existence of symptoms of hepatic disease.

II. The fact that though the symptoms are those of confirmed gangrenous abscess, the physical signs of such a condition are wanting.

III. The rarity of hemoptysis in these cases, as compared with those of ordinary gangrene of the lung.

It may be stated that in these three cases of pneumonic abscess, empyema opening into the lung, or hepatic abscess, with or without a perforation of the lung, we are utterly in the dark as to the causes which determine putrescence in some, and its absence in other examples of these diseases.

If, on the other hand, we have been able to observe the case from its commencement, and traced the symptoms and signs of a pneumonia to its suppurative stage, we might then, on the occurrence of fetor, diagnose putrid abscess. I have never seen any case of true primary gangrene of the lung preceded by the signs of the successive stages of pneumonia.

In most of these cases it is only with reference to prognosis that the determination of the question is of importance, for the treatment of the disease in either case should not materially differ. In Dr. Hudson's case, however, it will be seen that certain measures, such as local bleeding, and the use of large doses of mercury, were used with good effect subsequently to the formation of the abscess.

An important case of gangrene of the lung, and purulent deposits, is mentioned by Dr. Wiseman, in the Reports of the Liverpool Pathological Society(*a*). The patient, a female of

(*a*) Dublin Medical Journal, First Series, vol. xxvi.

rather intemperate habits, had been liable to chronic cough. She was attacked with what was probably diffuse inflammation of the vulva, which soon took on a gangrenous character. She died in three weeks, and it was found that the lower lobe of the right lung contained three gangrenous cavities which did not communicate with the bronchial tubes.

The left lung contained many small circumscribed deposits of yellowish purulent matter, not gangrenous.

Can we interpret the phenomena in this case by supposing the absorption of gangrenous matter, and recent gangrene of the lung thus induced? The fact of the co-existence of the disease with purulent deposits would seem to strengthen this supposition, to which Dr. Wiseman appears to incline.

The following conclusions appear justifiable from the present state of our knowledge on this subject.

1. That gangrene of the lung is met with under a variety of forms, differing from one another not only in the duration and violence of the symptoms, but also in their relations to various local and constitutional diseases.

2. That in a great proportion of the cases the disease is attended with putrefactive action engaging the necrosed portion of the lung, and affecting its secretions.

3. That in the progress of a case, we may observe the septic action singularly variable. It is increased by over-stimulation of the system.

4. That we cannot explain the symptoms in many cases of this disease, without assuming, either that a spot of mortification, so small as to be undiscoverable by physical means, causes severe symptoms, and is attended with super-secretion; or that a process of putrefactive secretion precedes, in many cases, the death of the lung.

5. That pain of the most extreme kind may attend this disease; and, in the remittent form, appear on each access of the affection with unmitigated violence.

6. That the contact with air is not necessary for the formation of a gangrenous eschar or cavity.

7. That hemoptysis commonly attends each access of the remittent disease.

8. That in the earlier periods of this disease, auscultation and percussion often fail in detecting any signs of organic change; or if such is discovered, it appears incommensurate with the gravity of the symptoms.

9. That in many cases the evidences of congestion and parenchymatous infiltration, seem to follow, rather than precede the symptoms of gangrene.

10. That dexiocardia, from diminished volume of the lung, may occur in gangrene of the right lung.

11. That gangrene may attack a lung previously hepatized from ordinary inflammation, or in a chronic tubercular condition.

12. That from the pre-existence of signs and symptoms of the stages of pneumonia, or from the early appearance of signs of excavation, we may be able to distinguish between fetid abscess of the lung and gangrene.

13. That in certain cases of chronic bronchitis the breath and expectoration may become fetid, and yet no gangrene appear to have formed.

14. That the diseases with which gangrene may be found complicated are divisible into general and local affections; but that its occurrence in the class of general diseases, termed putrid or asthenic, is much more rare than might be expected.

15. That it is rarely observed in the typhus fever of this country, even where the secondary bronchial affection is intense; but that in typhoid pneumonia it may be occasionally observed.

16. That it may complicate a previously existing disease of the lung, such as pulmonary tubercle, or an unresolved hepatization.

17. That it may be directly induced by the pressure of a tumour on the nutrient vessels and nerves of the lung, so that in cases of cancerous or aneurismal tumour, the patient may

die, not from the extension of the original disease, but from its inducing a rapid mortification of some portion of the lung.

18. That the disease, though always of a formidable character, is not necessarily fatal.

Art. II.—*On the Law of Mortality in Phthisis, and the Influence of Moral Causes in producing the Disease.* By James F. Duncan, M. D., T. C. D., Fellow of the College of Physicians in Ireland; Physician in Ordinary to Sir P. Dun's Hospital.

(*Continued from* p. 269, vol. viii.)

In the last Number of the Journal I directed the attention of the profession to the law of mortality in phthisis, as deducible from the only public documents of a statistical kind which appear to deserve implicit credence.

The investigation of the subject has brought to light one remarkable fact, not, so far as I am aware, previously noticed, namely, that in an agricultural district the majority of cases of consumption occurs among females, but in cities and large towns, on the contrary, among males(*a*).

A careful consideration of this striking fact, while it served in some measure to reconcile the conflicting opinions of previous writers, necessarily overthrew the various theories which had been put forward to account for the supposed excess of liability on the part of females to the affection, and suggested the idea that the difference in question can only be accounted for on the hypothesis, that moral causes must, *in a great measure*, be concerned in the production of the disease. I say, "in a great measure," because I am anxious to guard against the risk of being supposed to attribute the development of tuber-

(*a*) This fact has not escaped the attention of the authors of the Medical Report of the Hospital for Consumption at Brompton, dated in April, 1849, but which did not reach us until after the publication of our last Number.—Ed.

cle to the exclusive operation of these causes. I believe that no point in the pathology of phthisis is more satisfactorily established than its constitutional origin in a large number of instances.

My intention, on the present occasion, is to follow up what was then advanced upon this subject, by a few additional arguments; and the first I shall adduce is derived from the mental constitution of those persons who are usually the victims of the complaint. This point I cannot establish by numerical statements similar to those which have been already furnished, because no such data are in existence; but I can appeal to the ordinary experience of every physician to say whether the disease does not usually occur in persons whose temperament is peculiarly liable to be affected by moral impressions. Individuals there are who may be safely said to be exempt from its ravages altogether; but they are those who are more than usually blunted to the opinion of their fellow-men. An unmitigated independence of thought and feeling is the stern attribute that distinguishes their character. They act upon their own judgment, gratify their own passions, and pursue their own ends, utterly regardless of the good or bad opinion of their neighbours.

"Populus me sibilat; at mihi plaudo
Ipse domi ——"

is their motto. The miser, the truculent warrior, the remorseless tyrant, and others of the same class, are examples in point. No one has ever heard of persons of such a character dying of consumption. But, if the exemption be real, it is limited to a small number. Happily for society, the minds of men are not generally cast in such a mould. On the contrary, most persons will be found to be swayed to a certain extent by public opinion, and to receive impressions from the varying circumstances in which they happen to be placed, and hence their liability to be attacked by the disease in question.

Who is there that has not remarked, that the man of warm affections, of refined taste, of a cultivated intellect, who shrinks

from the slightest imputation of what is wrong, is the man of all others who has the greatest reason to fear the invasion of this insidious malady? What is the meaning of that common proverb, "too good to live," but this, that the gentle, the unassuming, the unselfish, and the kind, are peculiarly liable to be hurried to an untimely grave, while the disease that carries them away is undoubtedly consumption. Similarly, when the warm affections of a young and amiable girl have been crushed unexpectedly by some overwhelming disappointment, and she dies, as it said, of "a broken heart," what is the peculiar form which the fatal malady assumes? Is it not consumption?

Many passages, from various writers, but especially from the poets, might be quoted to support the assertion, that it is matter of observation that persons of this mental constitution are more than usually liable to the disease under consideration.

But I hasten to an argument of a different kind, which appears to me to be equally deserving of consideration, and that is the age at which the disease proves destructive to its victims. Were it the result of physical causes exclusively, such as variations of temperature, exposure to cold and moisture, residence in a peculiar climate, deficient or unwholesome food, &c., we would naturally expect to find it equally destructive at all ages. But this is not the case, as the following table, extracted from the Third Report of the Registrar-General, fully proves:

Age.	Manchester.		Liverpool.		Birmingham.	
	M.	F.	M.	F.	M.	F.
Under 1	68	47	58	68	45	38
1 to 2	52	60	99	101	26	30
2 „ 3	17	18	25	23	6	12
3 „ 5	20	15	27	31	18	16
5 „ 10	16	20	27	12	13	18
10 „ 15	39	49	38	32	27	29
15 „ 20	96	95	137	116	58	54
20 „ 30	98	90	127	123	67	44
30 „ 40	90	62	93	76	48	28
40 „ 50	51	55	53	49	43	21
50 „ 60	29	25	36	25	12	11
60 „ 70	14	10	10	7	3	1
70 „ 80	1	0	0	3	0	0

I have selected these towns, not because they were peculiarly favourable to the views I advocate, but because they are the only ones given in the Registrar-General's Reports, where the ages at which the patients died, as well as their diseases, have been publicly recorded. It is much to be regretted that the same has not been done for the entire kingdom, as well as for these larger districts, with the view of contrasting the influence of town and country life upon the health of the community. The reason I say so is this: the population of towns, more especially the male population, fluctuates exceedingly, in consequence of the constant influx of strangers, induced by the expectation of employment, the facilities of education for the young, or the attractions of social intercourse for all. As a consequence of this fluctuation, the rate of mortality is obviously liable to be disturbed from what it would be were the population unvariable. The amount of this disturbance varies inversely with the field of observation; and hence it becomes a matter of some importance, in attempting to estimate exactly the rate of mortality, to extend our observations as widely as possible, instead of confining them to a single town.

In the Supplemental Tables to the Irish Census, so ably compiled by Mr. Wilde, we have greater facilities for ascertaining the ages of those who died of phthisis, in the ten years to which they refer; but from the causes already referred to, they are less worthy of attention. Indeed it must be obvious to every one, that of all the information afforded by the Irish tables, that which refers to the age at which individuals have died some years before, must be the most uncertain. To enable the reader to form a more accurate idea of the influence of age in inducing consumption, I have calculated the proportion of deaths to the number of individuals actually living at the corresponding age, in each of the following towns and in Ireland:

Age.	Liverpool.		Manchester.		Birmingham.		Ireland.	
	M.	F.	M.	F.	M.	F.	M.	F.
5 to 10	·19	·08	·12	·15	·12	·16	·0	·0
10 „ 15	·28	·23	·31	·40	·28	·30	·09	·13
15 „ 20	1·11	·80	·84	·72	·66	·57	·20	·22
20 „ 30	·43	·35	·43	·32	·39	·23	·30	·26
30 „ 40	·40	·32	·49	·31	·38	·21	·32	·35
40 „ 50	·37	·34	·59	·59	·49	·23	·43	·47
50 „ 60	·53	·34	·67	·47	·24	·21		
60 „ 70	·28	·21	·42	·24	·11	·03		

The calculation has not been made for the period extending from birth to the fifth year, because there is a great excess of deaths registered in the first two years of that period; and the Census returns do not enable us to make it for each year separately. Making due allowance for the unsteadiness of the population already hinted at, and its influence upon the returns, I think it cannot fail to be apparent that there is a remarkable correspondence in the general result of this table, and, consequently, a strong confirmation of the doctrine of a law of mortality, as already explained. There appears, then, to be three periods of life at which the mortality of phthisis exhibits a maximum intensity. First, that immediately succeeding birth; secondly, that which commences at the epoch of puberty; and, lastly, that which corresponds to the decline of mature life. The first takes place at a period when moral causes can have no influence either in exciting or aggravating the liability; it is hence due to the force of constitutional predisposition almost exclusively. The other two are the result, in part at least, of moral causes which act at these periods of life with more than usual intensity.

Moral impressions produce their effect either by aggravating a tubercular diathesis already existing, but of too weak a character to destroy life by itself, or, where no such diathesis prevails, by breaking down the health of the individual in the first instance, so as to generate the conditions which are necessary for the development of the complaint. I think it

is not difficult to show that the ages at which moral causes produce their greatest impressions upon our system are precisely those of puberty and the decline of life. Before puberty, our moral nature may be said to be undeveloped; care, the canker of our existence, is then unknown; the anxieties which result from intercourse with the world, and from the exertion of independent enterprize, do not yet begin to agitate the breast. Even the affections, the fertile source of disease in after-life, are then incapable of producing such a result. Hedged in within the narrow limits of the family circle, they have sufficient scope for their gradual development and their healthy exercise, while they are sheltered from those sudden vicissitudes of excitement and disappointment which constitute the chief dangers they have subsequently to endure. But when the full period of puberty has arrived, with its characteristic changes in the physical organization of the frame, how different is the state of things. New ideas occupy the mind, new emotions swell the soul, new passions agitate the breast. The child has become a man, and, instead of being satisfied to occupy a subordinate position beneath his father's roof, he burns with the desire of asserting his own independence; he thinks and acts and feels for himself; and the consciousness of the capacity of becoming a responsible member of society prompts him to long for that opportunity that will place him in the position to which he feels himself entitled. But the transition from one of these conditions to the other is full of danger. Success or failure is alike trying to his moral constitution. The young emotions, that, like summer-buds, are bursting into blossom, are too delicate to withstand a premature exposure to the nipping frosts of a cold and chilling world.

It is easy to understand that, during adult life, the same causes, continuing to operate, should produce the same result, only in a less remarkable manner, from the circumstance that the sensibility becomes blunted, and experience makes us cal-

lous to impressions that would previously have been felt with keenness. But it appears at first sight somewhat difficult to account for the greater fatality of phthisis, as shown by these tables, in the decline of life than during the continuance of maturity; because, if the diminution in the number of cases registered in adult life is in any measure due to the passions becoming weaker, it ought to continue diminishing to the end of the three score years and ten that are allotted as the natural limit to our earthly existence. A little consideration is all that is necessary to correct this conclusion. In the first place, if the passions become weaker as age creeps on, so does the sustaining power of hope. If a man be unfortunate in middle age, he feels the disappointment more acutely than he would do if he were older; but then he is more capable of exertion to correct its effects. He can begin his former enterprise anew, or he can try some other; and the expectation of success, though not so great as that with which he set out in life, is still sufficient to carry him through the trying hours that are yet before him. In advanced age, on the contrary, he has not the energy to commence his original pursuit *de novo*, with a ruined fortune and a broken spirit. He is seldom capable of turning to anything else with the prospect of success, and there is nothing left him, in general, but to sit down in hopeless despair. This is the first and principal reason. But there is another, to which I shall presently have occasion to call attention more at length, and that is the difficulty of procuring employment for the aged. I speak not now of employment as embracing pecuniary remuneration, and, in that sense, exercising a cheerful influence upon the *feelings* of the individual; I speak of employment merely as occupation for the *thoughts*, and, as such, a preservative against the inroads of the disease we are considering. Few persons will employ the old, when they can get younger hands to do the work they require; fewer still will employ those whose misfortunes or misconduct have been the cause of their seeking such employment; and

hence the old, whatever may have been the nature of their previous pursuits, and whatever the cause of their ill success, are generally left to drag out the wearisome remainder of their days in idleness and disappointment. Can anything of a moral nature be more calculated to weigh down the drooping spirits, till disease and death, in some shape or other, come to relieve the sufferer?

To afford a more accurate idea of the foregoing table, I may mention, that the Registrar-General(*a*) has made the mean average mortality in the metropolis to be 0·40 for males and 0·37 for females,—a statement which, if we suppose it true of the towns I have referred to, will prove that, from childhood to puberty, the ratio is far below the mean; during adult life, it corresponds to it almost exactly; and that, at puberty, and from the fortieth to the sixtieth year, it greatly exceeds it. It is scarcely necessary for me to mention the circumstance that these returns contradict, in the strongest manner, the popular opinion that infants and old persons are exempt from the ravages of consumption.

The last argument I shall adduce has reference to the mode in which *employment*, considered abstractedly, acts upon the system. Employment, of every kind, has a double effect upon the individual engaged in it. The first and most direct is that produced by the mere circumstance of the attention being occupied for a given time in the pursuit immediately in hand. The second is the remote effect produced through the agency of the moral sentiments. These latter are excited or depressed according as the peculiar nature of the employment happens to be congenial to the taste of the individual, or otherwise. They are also affected by the circumstance of success or failure attending the enterprise engaged in. The observations in the previous part of this paper have reference to this aspect of the question more especially; but the other

(*a*) Third Report, 8vo. ed. pp. 249, 250.

effect to which I have just now alluded deserves consideration also. It can scarcely be questioned, from the mere fact of man having been created an intelligent being, that the exercise of all his faculties within proper restrictions is essential to his health and happiness, and that any departure from this obvious condition of his existence must be attended with injurious consequences. If the mind be suffered to lie fallow for a length of time,—from absolute want of occupation, or from occupation which does not sufficiently engage the attention,—the person so offending is sure to suffer the penalty entailed upon the infraction of Nature's law. That penalty does not consist merely in the wasting of the powers immediately concerned, it embraces also the remote obstructions to the healthy action of the machine that result from an essential part of the animal organization getting out of order; just as if, in a watch, the movement of the hands were to be sustained by some accidental arrangement different from the original construction, while the main-spring and central parts remained motionless. Such a state of things might continue for a time, without injury or without inconvenience; but let it be unduly protracted, and the necessary result would be the formation of rust upon the unused parts, which again would re-act upon the others, inducing, first, irregularity, and ultimately a total suspension of their movements.

Practically speaking, it is not very easy to estimate exactly the precise extent to which want of employment by itself operates in producing disease, because it is impossible to separate it completely from the moral impressions which accompany it in actual life. The following instances, however, appear to me to suggest that one of the modes in which mental inaction operates injuriously is by developing consumption.

In a paper read by Mr. Noble before the Medical Section of the British Scientific Association, at Manchester, in 1842(*a*),

(*a*) Edinburgh Monthly Journal, 1842, p. 773.

the object of which was to elucidate by statistical evidence the tendency of the factory system to produce consumption, we find it stated, that a careful examination of the Registrar's returns for the township of Manchester, for the three preceding years, showed that, taking all the cases that died there, from fifteen up to forty years of age, there were:

Employed in factories, ...	174
In other employments, ...	590
Without stated employment, . . .	377

The report in the paragraph from which this statement is quoted, as well as that in the Annual Report of the Association, is so very meagre that it is impossible to determine whether the last class refers to cases occurring in the upper ranks of society, whose circumstances placed them above the necessity of actual labour, and consequently above the anxieties and privations inseparable from the want of employment in persons depending upon their own exertions for support, or whether it merely means that the individuals referred to were not in the habit of following any one employment to the exclusion of others. In either case it is not to be denied that moral impressions, in addition to mental inaction, may have contributed very materially to the development of the result in question.

The other instance is the extreme frequency of consumption among the military. In Major Tulloch's Reports of the Health of the Soldiers, we find it laid down that the average annual mortality from consumption, among the dragoon guards, is 0·63 per cent. of the total force. In the infantry of the line the proportion is still greater; while of the entire population of England and Wales the mean average for males is only 0·37 (*a*). Similarly the mortality among the civilians at Malta, on the authority of Major Tulloch, is less than that among the military. In a note to the Sydenham Translation of Louis on

(*a*) Registrar-General's Report, 1841, 8vo. ed., p. 249.

Phthisis, p. 494, speaking of the climate of Mexico, we find this remarkable expression: "The medical men of the town are of opinion that phthisis is rare there, *except among the military.*" How comes it that the profession of a soldier should have this extraordinary tendency to develope the disease? When we consider, in reference to the British army, the care taken in the selection of well-formed and healthy recruits, the judicious liberality displayed in ministering to their comforts, the attention bestowed upon providing them with wholesome food, warm and sufficient clothing, and healthy barrack accommodation, the regularity in the receipt of their pay, the absence of all laborious and fatiguing duty in time of peace, and the skill and attention bestowed upon them when sick, we naturally expect a result the very opposite of that which experience proves to occur. The surprise that such a fact naturally produces is still further increased when we remember that the disease is as rare among seamen as it is common among soldiers, though the physical condition of the former is in many respects much less favourable than that of the latter. The employment of a sailor is more laborious in general than that of a soldier; he is more exposed to the inclemency of the weather, and with less shelter; he is frequently obliged to remain in his wet clothes for hours; when he retires to sleep it is in a close and crowded berth, where he perspires from every pore; and when the four hours of his broken rest are over, he has to start up again, it may be in the middle of the night, to stand shivering amid rain and wind on his dreary watch. Even his food is, in general, inferior to that of the soldier. How comes it then that such a difference should exist in the two occupations as to the liability to this common complaint? I believe it arises from the very different conditions in which they are placed as to moral and intellectual impressions. The soldier in time of peace is doomed to the dull monotony of drills and parades, where the perfection of his service consists in his becoming an animated machine,

to obey, without thought and without resistance, the movement directed by another. Even the accustomed duty of mounting guard is an exertion but little calculated to exercise the reflective faculties, and to gratify the mind. With the sailor everything is different. In all the vicissitudes of sunshine and of storm there is abundance of employment for independent thought and action; his attention is continually occupied, and the scenes through which he passes, from their ever-recurring novelty, prevent that stagnation of the soul which is sure to degenerate into corruption.

I know it may be said that the vices of the military have more to say to the production of the disease in question, than the listlessness of their life. But, without denying that these, so far as they exist, may contribute their share to the result, still I think that any one who considers the improved tone of morals among our soldiers generally, and the little real difference, in this respect, between them and sailors, will be forced to admit that something else must exist to produce a result so different between the two classes of men.

Having said so much upon the influence of moral causes in producing consumption, it remains for me to say a word or two,—first, upon the *modus operandi* of such causes acting on the animal frame; and secondly, upon the practical advantage to be derived from an attention to the subject.

Simon, in his Animal Chemistry, vol. ii., p. 479, states the formula for crude pulmonary tubercle to be $C^{43}H^{35}N^{6}O^{13}$, while that for protein is $C^{48}H^{36}N^{6}O^{14}$; in other words, tubercle consists of an imperfect protein, differing from it in the absence of five atoms of carbon, one of hydrogen, and one of oxygen. Protein is the starting point of all the tissues, and the primary compound principle of fibrine, albumen, and casein. It is, of course, the natural result of the process of digestion, when healthily performed. When this process, from any cause, is interfered with, the proper combination of the organic atoms does not take place, and a less soluble product

is formed than what the necessities of the system require. Now, it is easy to see that the depressing passions must, to a very considerable extent, operate in this way. All the secretions are under the influence of the emotions to a remarkable degree. Intense sorrow suspends the secretion of the gastric juice. Sudden fright stimulates the kidneys to unwonted activity. Anger arrests the action of the liver. Even the tears do not flow when grief is very violent. Is it at all surprising that a slighter degree of these emotions, acting slowly, but not less certainly, should interfere with some of the deeper processes of digestion, or prevent the full development of a healthy fluid?

Exhilirating impressions, on the contrary, have an opposite effect, causing these processes to take place with greater rapidity and force, and so purifying the system of every stagnant element that might accumulate and become prejudicial. Even ordinary occupation must have some effect in this way, by imparting tone to the various organs immediately concerned, and by permitting them to pursue quietly and without disturbance their proper functions(*a*).

The practical utility of this view of the subject consists, first, in directing us to proper modes of managing those individuals who are born with an hereditary tendency to the complaint, but in whom the constitutional bias is not so great as to prove immediately destructive to life. In all such cases I believe it to be of the utmost importance, in addition to proper hygienic treatment, to have the mind profitably employed in some manner suitable to the tastes and capacity of the individual. I do not, of course, mean to say that the powers are to be overtasked by protracted occupation, and without cor-

(*a*) It is scarcely necessary to remind the reader that the opinion here advocated is strictly in accordance with what has been already published by Sir James Clarke under the head of tuberculous cachexy, and by Dr. Todd under that of strumous dyspepsia, as occurring antecedently to the actual development of tubercle and preparing the way for it.

responding relaxation. Such persons are not formed for great exertion, either mental or corporeal. But it is one thing to give them employment sufficient to occupy and exercise their faculties, and it is another to impose upon them a burden to which they are unequal. Cheerful society should, in all cases, be provided for them. In determining the nature of the employment, much must be left to the judgment of the medical man, and still more to the taste of the individual. Mere amusement, however it may please for the moment, will not answer for a continuance; it palls in the enjoyment, and the mind necessarily pants after that active and industrious exertion of its faculties which is the original condition of its existence.

The same holds equally true at a later period, when, the disease having developed itself by unequivocal signs, a change of climate comes to be considered, with the view of arresting its progress. I believe that far too much attention has been bestowed upon the mere atmospheric conditions involved in this measure, and far too little on the accidental circumstances associated with it. Every one must admit, that after all the study which has been bestowed upon the subject of climate, very little information of a satisfactory nature has been obtained. We find some writers recommending a moist climate for the invalid, some a dry one, some a moderately warm, and others a moderately cold one; while in almost all these places, if accurate information could be had, the frequency of the disease would, probably, be found to differ very little from what exists at home. I am very far from wishing to discourage a change of climate in the early stages of consumption; I believe that it is often attended with striking and decided benefit, but I am anxious to call attention to the *adjuvantia* and *lædentia* inseparable from it. Among the former may very frequently be enumerated, removal from unpleasant circumstances, or the want of suitable society at home; the excitement of visiting foreign countries, with their peculiar manners and habits; new associations formed on the journey; and

the opportunities of mental improvement in various ways. On the other hand, it must not be forgotten there are drawbacks in the separation of the individual from his family and friends; the inconvenience arising from the want of many comforts to which he may have been accustomed; the accidental circumstance of his meeting with companions of a congenial disposition with his own; the absence of all taste for the attractions which the countries visited may present: these, and many other circumstances, contribute materially to counteract all the advantages that the best-selected climate can possibly afford.

I knew one young gentleman brought up to mercantile business, and destitute of those resources within himself which spring from a liberal education, who went abroad for change of air when labouring under consumption. Though most amiable in disposition, he was little else than a walking vegetable; he took no pleasure in reading or in the improvement of his mind. Even the passing topics of the day seemed to have no attraction for him. All his enjoyment seemed to be centred in his family. Fortunately for him, his mother and sisters were able to accompany him, as otherwise I have very little doubt that the fatal issue would have been accelerated rather than retarded by the removal.

The following cases illustrate the opposite view of this question. They are those of two brothers, whose mother died of the complaint. The elder I did not see previously to his departure for Italy, but I have little doubt, from the medical treatment abroad, that he really laboured under the disease. He was a young man of cultivated mind, of an ardent temperament, and considerable ability. During his residence on the Continent, he occupied himself, not only in seeing the lions of the several places he visited, as tourists usually do, but he took sketches of the scenery, and copied the details of many of the models of architecture for which the Roman capital is so celebrated; a circumstance that has proved of immense advantage to him in the profession of an engineer, which he has

adopted since his return. Of his brother I can speak more decidedly. In addition to the predisposition which he inherited from his mother, evidenced in his thin figure, clear blue eyes, and great height, in proportion to his age, he had distinct physical evidences of the formation and softening of tubercular matter at the apex of his right lung. This I had ascertained at midsummer, a few years ago, as he was preparing to enter the University. At my suggestion, his studies were abandoned, and the family removed to the County Wicklow, where, in addition to the mildness of the air, he enjoyed the opportunity of boating on the sea in company with some young persons of his own age. All this had a most marked and beneficial effect upon his system, and, though he retained many symptoms of delicacy, all the signs of tubercular excavation disappeared. In the autumn of that year, his brothers got an engagement as engineers to a projected railroad in Spain, and they proposed to him to accompany them, and they would give him employment. The offer was cordially accepted; he entered with alacrity into the duties of his new office, and was soon able to endure a degree of fatigue which he could not previously have attempted; and even to wade through rivers without changing his clothes, and without the slightest subsequent ill effect. He has, since then, returned to this country in perfect health, and has remained well ever since. I am aware that it may be said the beneficial result experienced in his case was due to the change of climate solely, and not to the mere circumstance of his having procured congenial employment; but from inquiries that I have made from him, I have reason to believe that Spain, especially that part of it where he was stationed, is anything but favourable to the consumptive invalid; the natives frequently fall victims to the disease; and the weather is exceedingly trying to a delicate constitution.

I now leave this subject to the candid consideration of every reflecting physician; merely remarking, that it appears

to me to place the treatment of this intractable malady in a different point of view from that which has been generally entertained, as also to suggest a probable explanation of what is otherwise unaccountable, namely, the occasional success of certain remedies in particular cases, and their frequent failure afterwards in other instances, similar, as far as symptoms and physical disorganization are concerned.

The admission of this principle is not, it is true, calculated to make the treatment of any case more easy to the practitioner; on the contrary, it will tax all his resources to the utmost, both in discovering the nature of the adverse circumstances in which the patient is placed, and in directing the best mode of counteracting them. In many cases it is absolutely impossible for human skill to "minister to a mind diseased," and in all it is extremely difficult; but if there be any truth in what has been advanced in this essay, the attempt ought most certainly to be made; and even when our best efforts may prove unsuccessful, a recognition of the principle itself will give us juster ideas of the value of the *medical* means resorted to than we should otherwise be enabled to form.

Art. III.—*On the Mental Disorders of Pregnancy and Childbed.* By Fleetwood Churchill, M.D., M.R.I.A., Hon. Fellow of the King and Queen's College of Physicians, &c. &c.

I have no intention, in the present Essay, of entering upon the subject of insanity generally, or the inquiry as to whether it is owing to bodily derangement alone, as some have maintained, or whether the mind itself may not, in some instances, be disordered. Without attempting the solution of the problem, it is sufficient that we admit that man is a compound being, with the inter-dependance of mind and matter so finely adjusted, that, so long as the balance is preserved, the action of the machine is as perfect in its nature as wonderful in its results.

But the very nicety of this balance, the very intimate and accurate relation between the body, or especially the brain, and the mental development, appears occasionally to lead to the disturbance of the latter. The cords are so fine and so tense that an excess of vibration in the one extremity induces discord in the other.

If this be the case with men, who are possessed naturally of a firm and vigorous constitution,—if a very slight deviation from bodily health distorts or upturns their mental operations, how much more exposed must women be to such disturbances, who, in addition to the causes common to both, possess a more delicate organization, more refined sensibilities, more exquisite perceptions, and are, moreover, the subjects of repeated constitutional changes and developments of a magnitude and importance unknown to the other sex.

These functions are, menstruation, conception and pregnancy, parturition and childbed, and lactation. That functions of such great consequence, involving changes so enormous in their results, and yet so delicate in their minute details, should exert an influence upon the mind of the female, cannot be a matter of surprise, and a little inquiry will show us that the mental condition does correspond to these changes by an increased sensitiveness and by a greater liability to disturbance; and further, that this disturbance may amount to incoherent action or insanity.

Contrast for a moment the mind of a young girl before and after puberty. Previously to that event, it is the mind of a child, merry, thoughtless, volatile; occupied with childish trifles, delighted with toys; playing with her brothers, and differing from them mainly in some little feminine tastes, and in being less boisterous.

After menstruation, a great and rapid change is evident; womanly tastes and womanly feelings have sprung into existence; thought, feeling, and reflection are substituted for her former levity; her expressions are more refined, more reserved,

and indicating deeper sentiment; her affections are warmer yet more finely tempered; her pursuits are more elevated, her tone of mind more serious. Occasionally she is sad without cause, and her sympathy for sorrow and distress is more deep and earnest; even her joy, though less buoyant, is more intense, and her tastes are finer and more delicate. In short, under the influence of bodily development, her mind has expanded, and, from a lively merry girl, she has been transformed into a woman(*a*).

Now, from this susceptibility of the nervous system, this mental sensitiveness, the step to morbid excess of it is but slight, and the gradations very easily traced. The pensiveness may degenerate into sadness and melancholy, especially under the influence of any moral cause; or a disturbance of the bodily functions may itself excite the morbid mental condition. Hysteria and analogous nervous affections are nearly allied to more serious mental disorders(*b*).

Dr. Haslam observes: "Insanity and epilepsy are often connected with menstruation, and suffer an exacerbation of their paroxysms, at the period when the discharge happens or ought to happen;" and he gives a case, of which he says that "the insanity of M. M. was connected with her menstruation; after its cessation she recovered, although she had been confined for more than sixteen years"(*c*).

Dr. Spurzheim remarks: "Many delicate premature females, of lively disposition, at the period of menstruation, or soon after, by imperceptible degrees, lose the manifestations of the mind; they become inactive, and neglect those objects and pursuits which formerly were to them sources of instruction and delight. They do not show the same attachment to their parents or friends; they are careless of reproof, and unfeeling to kindness; they are negligent in their dress, inattentive to

(*a*) Raciborski, *De la Puberté*, p. 103.

(*b*) Laycock on Nervous Diseases of Women, p. 551.

(*c*) On Madness and Melancholy, pp. 215, 232.

personal cleanliness, and finish with a general apathy and idiotism"(*a*).

Dr. Burrowes says: " Everybody of the least experience must be sensible of the influence of menstruation upon the operations of the mind. It is, in truth, the moral and physical barometer of the female constitution"(*b*).

" Some females," observes Dr. Pritchard, " at the period of the catamenia, undergo a considerable degree of nervous excitement; morbid dispositions of mind are displayed by them at these times, a wayward and capricious temper, excitability in the feelings, moroseness in the disposition, a proneness to quarrel with their dearest relatives, and sometimes a dejection of mind approaching to melancholia"(*c*).

That menstrual disorders, particularly amenorrhœa, are frequently coincident with insanity, is admitted by all writers, some, however, maintaining that they are causes, others that they are effects. Dr. Burrowes takes the latter view, but in one of his cases the reverse was the case. Dr. Pritchard observes: " Sudden suppressions of the catamenia are frequently followed by diseases of the nervous system of various kinds. Females exposed to cold, undergoing powerful excitement, experience a suppression of the catamenia, followed, in some instances, immediately by fits of epilepsy or hysteria, the attacks of which are so sudden as to illustrate the connexion of cause and effect. In attacks of madness the catamenia are, for the most part, wholly or partially suppressed during the early periods, and in many cases it is not easy to say whether the suppression is the effect or the cause of the disease. We have already alluded to the case of a young female, mentioned by M. Esquirol, who suddenly exclaimed that she was cured of her disorder; her catamenia had flowed spontaneously, and her restoration to sanity was the immediate consequence"(*d*).

(*a*) On Insanity, p. 162.
(*b*) Commentaries on Insanity, p. 146.
(*c*) On Insanity, p. 207.
(*d*) Ibid. p. 207.

The observations of M. Foville fully confirm the statements of Dr. Pritchard(*a*), and I find that in a table of 235 cases of dementia by M. Esquirol, fifteen are stated to be from disorders connected with menstruation, and thirty-five connected with the critical age. He has also remarked that madness is more frequent in proportion among women under 20 than above 50.

I saw a case lately illustrating the point in question. It was that of a young lady, aged 17, who had menstruated regularly for a year or thereabouts, but in whom the discharge had been suddenly arrested without apparent cause. She complained of headach for a few days, and then it ceased; her pulse was perfectly natural and her appetite pretty good, but her mind gradually became clouded, and, at length, the prey of the deepest melancholy; she regarded herself as a castaway, spoke of her doom as fixed for ever in misery, and became completely insane. Neither medicine nor change of air and scene did her any good, and her friends were reluctantly obliged to think of placing her in confinement, when the menses suddenly re-appeared, after eight or ten months' absence, and she immediately recovered her mental health.

A curious case came under the observation of Mr. Speedy and myself some time ago. A servant-girl, aged 17 or 18, was sent to live in a lone house near Howth, where the only person she saw was a policeman. She had previously been irregular, and was much depressed. On returning home she was unwell, and talked nonsense, and her mother, supposing that she had fever, sent her to Cork-street hospital; thence she was dismissed as not having fever. On coming out she declared to a clergyman that she was pregnant and going to miscarry. We took her into the Western Lying-in Hospital, but could find no evidence of pregnancy, but enough of congestion, and probably of inflammation of the brain, for which we treated her,

(*a*) *Dict. Med. et de Chirurg. Prat.*, vol. i. p. 521.

and of which she died. On *post mortem* examination, not only was she not pregnant, but, so far as we could judge from the state of the organs of generation, she was a virgin. Her pregnancy was insanity. The late Dr. Hunt related a similar case to me.

Connected with menstruation and its derangements, as I have already mentioned, is the protean disorder which we call hysteria, and this, as Dr. Burrowes observes, will sometimes degenerate into mania: "Nervous, susceptible women, between puberty and thirty years of age, and clearly the single more so than the married, are more frequently visited by hysteria, and such constitutions have always a greater aptitude to strong mental emotions, which on repetition will superinduce mental derangement, and perhaps epilepsy"(*a*).

"The critical period," according to the same author, "as it is called, when menstruation ceases, is certainly favourable to the development of mental aberration. The whole economy of the constitution, at that epoch, again undergoes a revolution. The moral character, at the age when the menses naturally cease, is much changed from what it was on their first access; and every care or anxiety produces a more depressing and permanent impression on the mind"(*b*). Dr. Haslam refers to several cases of insanity which ceased at the critical period.

I may add that the deviation from mental health in women, even when the intellectual faculties are plainly disordered, is generally caused through the affections or moral qualities, and in this they differ from men under similar circumstances.

No one, I am sure, will suppose that I mean to assert the necessary or frequent connexion between menstruation and insanity, but merely their occasional combination; neither do I pretend to explain it; the fact is as I have stated, and it is of practical importance to remember that the changes of character

(*a*) Commentaries on Insanity, p. 192. (*b*) Ibid. p. 192.

and the mental development are dependent upon the bodily functions called into existence at puberty.

But this inter-dependance of mind and bodily functions is more remarkably exhibited during the next great development in the female economy. The sensibilities expanded by puberty are heightened during pregnancy, and not unfrequently more or less disturbed. The increase of local organic action is accompanied by general nervous irritability, which shows itself in various modes and degrees Few women are quite as self-possessed, or in as even spirits, during pregnancy as at other times; little things annoy them; trifles depress them; or it may be that they are just as inordinately excited, displaying a degree of caprice or levity foreign to their character. Sometimes the most sweet-tempered become irritable, cross, and quarrelsome. The husband of a patient of mine told me that the earliest symptom of pregnancy in his wife, who was remarkably good-tempered and attached to him, was a disposition to quarrel with himself especially.

Dr. Montgomery mentions the case of a lady who, for the first two or three months of pregnancy was so irritable that, "to use her own words, she was a perfect nuisance in the house." He also relates one of an opposite character. "A gentleman lately informed me that being afflicted with a stepmother, naturally more disposed to practise the *fortiter in re* than to adopt the *suaviter in modo*, he and all the household had learned from experience to hail with joyful anticipations the lady's pregnancy, as a period when clouds and storms were immediately exchanged for sunshine and quietness"(*a*).

In a late volume of Guy's Hospital Reports Dr. Lever relates the case of a lady who was two months pregnant, and who, from having been the life of the household, light-hearted and gay, "now sat wherever she was placed, neither turning her head

(*a*) On the Signs of Pregnancy, &c., pp. 18, 19.

nor her eyes to one side or the other: she was a living automaton; her movements were automatic; there was life, it is true, but there was no mind; her chiselled face seemed cut in alabaster"(*a*). She recovered after her confinement.

Dr. Burrowes observes, that " whenever mental disturbance occurs during pregnancy, it partakes oftener of an idiopathic character, either in the form of mania or melancholia, than of the delirium which succeeds parturition." " I have seen," he adds, " two cases where hysterical symptoms attended during pregnancy, and the patient almost immediately on delivery became insane"(*b*).

It is very natural that with a known or unknown amount of suffering before them, and with a certain but unknown degree of danger connected with the termination of pregnancy, women should occasionally at least be subject to depression of spirits, and should take a gloomy view of their prospects. With the majority this state of mind is only occasional, or is dissipated as gestation advances, but it is not always so; with some it increases, and they constantly and steadily anticipate evil, and are either deeply distressed or apathetically despairing.

As Dr. Montgomery has observed, this state of mind is often accompanied, or perhaps caused, by bodily derangement: the stomach and bowels are out of order, the patient complains of headach and nausea, with a foul tongue, quick pulse, and a bilious tinge of the skin. Proper treatment will generally relieve both the bodily disorder and mental depression in these cases. " Sometimes this state appears to depend upon some peculiar condition of the brain, the nature of which we probably cannot appreciate, and which our treatment will but too often fail to correct: in one strongly marked instance of this kind, which was some time ago under my care, the lady

(*a*) Vol. v. p. 22, second series. (*b*) Commentaries on Insanity, p. 364.

became maniacal on the fifth day after delivery, and continued deranged for many months"(*a*).

A similar case is related by Dr. Haslam(*b*).

Some years ago I attended a lady in her first confinement, who had nursed a relative who died of hemorrhage during labour. This made a deep and fearful impression upon her mind, and from the moment she found herself pregnant, she had settled that she should die of hemorrhage during her labour: she had reconciled her mind to it; dismissed all doubts, and I may say fear also; and, regarding it as certain, she arranged all her affairs and her household, so as to give her husband as little trouble in his affliction as possible, and then when labour commenced she watched every pain for the final issue. The labour terminated favourably, but, before this consummation, her fears had completely overmastered her reason, and she became delirious for about an hour, after which she recovered.

But these inequalities of temper, and temporary depressions of spirits, are but a step towards more serious mental derangement. In more susceptible females the mind is occasionally completely thrown off its balance, and the patient becomes partially or wholly insane.

Esquirol mentions the case of a young woman of a sensitive habit who had an attack of madness in two successive pregnancies, commencing immediately after conception and lasting fifteen days. Several woman at La Salpétrière were there for insanity connected with pregnancy.

Dr. Montgomery states that he knew a lady who was attacked with insanity in eight successive pregnancies, and another who was similarly affected three times soon after conception, and remained so until within a short time of her labour, when she became sane, and remained so until her next pregnancy(*c*).

(*a*) Montgomery, Signs of Pregnancy, p. 20.

(*b*) On Insanity, p. 235.

(*c*) Signs of Pregnancy, p. 21.

On the other hand, pregnancy occasionally relieves mental derangement. Goubelly gives a remarkable case of a lady who was of sound mind only during gestation; and the well-known case of Mrs. Durant was one of this kind. I lately saw a case of confirmed melancholia in a lady which disappeared entirely on her becoming pregnant.

Generally speaking, these attacks come on gradually, continue for a time, and disappear before or after delivery, without any peculiar danger either from the malady or from the want of rational self-control on the part of the patient. It is not always so, however. Not very long ago a very distressing instance to the contrary occurred. A lady, pregnant but in perfect health, was employed in some household duty, and was talking cheerfully to her husband and sister; suddenly and without any particular reason, she left them and went to her bedroom and instantly destroyed herself. This must have been a sudden attack of insanity, for up to the moment she was cheerful and happy, in good circumstances, and greatly attached to her husband; but other members of her family had been subject to insanity.

In pregnant women there is occasionally a special but very melancholy cause of mental derangement, in addition to the physical condition common to all. I allude to some absorbing mental distress, such, for instance, as a profligate or cruel husband, or, more effective still, an accusing conscience. I may say, with Dr. Montgomery, "how deplorable must be the condition of mind in a woman, who, led astray by the profligate from virtue's paths of pleasantness and peace, and then abandoned, is compelled to consider her pregnancy a curse instead of a blessing, and has, in addition to the ordinary troubles of that state, to bear up against the agony of disappointed hopes, of affections misplaced and cruelly abused, to endure the present scorn of society, and the apprehensions of a still increasing shame, for which she is to

find no 'sweet oblivious antidote' of power 'to pluck from the memory a rooted sorrow,' or, 'raze out the written troubles of the brain'?"(*a*) How often has such a state of mind been followed by convulsions, or, ending in insanity(*b*), has armed, with the weapon of suicide the once gentle hand of her, who, to use the words of William Hunter, "might have been an affectionate and faithful wife, a virtuous and honoured mother through a long and happy life; and, probably, that very reflection raised the last pang of despair which hurried her into eternity."

According to Esquirol, the moral causes of insanity, in pregnant and puerperal women, are to the physical as 4 to 1; and of ninety-two cases reported by him, twenty-nine were unmarried women.

Again, it has been remarked by most writers, that women affected with any degree of mental derangement during pregnancy are more disposed than others to puerperal mania. But the serious character of these attacks is even deepened by the fact, abundantly established, that the evil is not limited to the mother. Not only may organic diseases of the body be transmitted to the infant, but a predisposition to insanity, thus multiplying the distress in a most alarming ratio.

I need not say that we have no means of minutely explaining the causes of these attacks; we may say, with Dr. Pritchard, that, "if we consider the frequent changes or disturbances occurring in the balance of the circulation from the varying and quickly succeeding processes which are carried on in the system during and soon after the periods of pregnancy and childbirth, we shall be at no loss to discover the circumstances under which a susceptible constitution is likely to suffer. The conversions or successive changes in the temporary local determinations of blood which the constitution, under such circum-

(*a*) Signs of Pregnancy, p. 22.

(*b*) Lever, in Guy's Hospital Reports, vol. v. p. 23, second series.

stances, sustains and requires, appear sufficiently to account for the morbid susceptibility of the brain"(*a*).

But let us now inquire what practical inferences we can draw from the sketch I have here given:

1. We have seen that the mental disturbance may exist in various degrees, from mere caprice or obliquity of temper up to actual insanity, and that the various shades are separated by no very defined line, but run into one another even in the same case. These caprices and melancholy anticipations are not to be treated with ridicule or indifference, still less are variations in temper, however unpleasant, to be met with a similar spirit of irritability; but the patient should be treated with a mixture of reasoning and patient kindness, soothed, and cheered, and strengthened. Nor should higher considerations be omitted; the forebodings of evil and the depression arising from fear are best relieved by a reference to the wisdom and fatherly kindness of Him "in whose hand are the issues of life."

2. This soothing and encouraging kindness is nearly all that we can do in those cases where there is no tangible bodily illness; but where there is any degree of feverishness or headach, immediate attention should be paid to the state of the digestive system and the bowels. It is possible that it may be necessary to abstract a little blood, but such cases are rare.

3. With patients suffering even slightly, in the way I have described, great care should be taken to avoid sudden or powerful mental emotion; all frightful or depressing stories should be prohibited, and all tragic representations, &c. Dr. Montgomery has recorded instances in which mischief was done in this way. The evil may be felt by the offspring even if the mother escape. Premature birth, death, or imbecility of the child, may be the result of fright to the mother.

4. Dr. Burrowes observes, that insanity during pregnancy

(*a*) On Insanity, p. 312.

is occasionally owing to adventitious causes, such as the suppression of cutaneous eruptions, discharges and drains of different kinds. In such cases he advises us to use the means most likely to reproduce them.

Great watchfulness must be employed in all such cases, lest the patient should attempt to injure herself, but we must take care that our object is concealed from her.

The next modification of mental disturbance which I shall notice occurs during labour, and had been described by no author until Dr. Montgomery published his paper in this Journal in the year 1834(*a*). Dr. Burrowes mentions "a temporary delirium often accompanying difficult labours," but that is all he says of the affection, and no allusion is made to it by any previous author.

The delirium in question is very temporary, lasting but a few minutes in some cases, half an hour in others. "It comes on suddenly during perfectly natural and favourable labour," about the time when the dilatation of the os uteri is at its maximum, and the suffering the most severe. "It is not accompanied by any other unpleasant or suspicious symptom, occurring perhaps immediately after the patient has been talking cheerfully, and, having lasted a few minutes, disappears, leaving her perfectly collected, and returns no more, even though the subsequent part of the labour should be slower and more painful. In every instance which came under my observation, the patients were afterwards conscious that they had been wandering, and occasionally apologised for anything they might have said, although they were not aware of what the exact nature of their observations might have been."

I have seen several cases of this kind, and, with one exception, they corresponded very accurately with this description of Dr. Montgomery's. In one case the delirium, which occurred first during the dilatation of the os uteri, returned

(*a*) First series, vol. v., p. 52.

as the head was passing through the os externum; and this patient informed me that she was conscious of talking nonsense, and had in vain endeavoured to resist it. Dr. Montgomery attributes this momentary incoherence to the suffering attendant upon the forcible distension and dilatation of the cervix, and there can be no doubt, I think, that this is the true explanation.

I shall now proceed to the consideration of *puerperal mania*, or that form of insanity which occurs in childbed soon after delivery, or at the commencement of suckling.

It is a very distressing malady in itself, but doubly so from occurring at a moment ordinarily so joyful; and yet we cannot be surprised at the susceptibility manifested at this particular time, when we remember that "the sexual system in women is a set of organs which are in action only during half the natural life of the individual, and even during this half they are in action only at intervals. During these intervals of action they diffuse an unusual excitement throughout the nervous system: witness the hysteric affections of puberty, the nervous susceptibility which occurs during every menstrual period, the nervous affections of breeding, and the nervous susceptibility of lying-in women"(*a*).

Attacks of puerperal insanity are not infrequent. Esquirol states that of 600 women in La Salpétrière, fifty-two were of this kind; and of 1119 cases admitted in four years, ninety-two were cases of puerperal mania. He found it even more frequent in proportion among the higher ranks, for out of 144 cases of mental derangement in females of opulent families, the attack came on during childbed or lactation in twenty-one.

Dr. Haslam states, that of 1644 females in Bethlem Hospital, eighty-four were cases of this kind; and Dr. Rush mentions five cases in seventy at the Philadelphia Lunatic Asylum.

The attack may, in some few cases, be a continuance or a

(*a*) Gooch on the more important Diseases of Women, &c., p. 127.

further development of the nervous affections of pregnancy; the nearer the approach to mental derangement during this period, the greater the probability of an attack after delivery.

There are two periods, however, at which patients seem especially obnoxious to it:—1st, immediately after delivery, to which the term *paraphrosyne puerperarum* has been given; and 2ndly, about the fourth or fifth day, when the full secretion of milk is established, and then it has been termed *mania lactea.* Dr. Burrowes adds a third period, about the fourteenth or fifteenth day, and he then attributes it to the effect of cold in checking the secretion of the milk.

I find that of Esquirol's cases sixteen became delirious from the first to the fourth day; twenty-one from the first to the fifteenth day; seventeen from the sixteenth to the sixtieth day; nineteen from the sixtieth day to the twelfth month; and nineteen after forced or voluntary weaning.

Of Dr. Burrowes' cases, in thirty-three the access was before the fourteenth day; in eleven, after the fourteenth and before the twenty-eighth day.

The premonitory symptoms vary a good deal. In one sense hereditary predisposition, or the nervous affections of gestation, are premonitory, but in most cases we shall generally find, previously to an attack, a degree of exhaustion, conjoined with great excitability, headach, and want of sleep: or the attack may accompany or follow convulsions, as I have seen in more than one case. Dr. Haslam remarks: "The first symptoms of the approach of this disease after delivery are, want of sleep, the countenance becomes flushed, a constrictive pain is often felt in the head, the eyes assume a morbid lustre, and wildly glance at objects in rapid succession; the milk is afterwards secreted in less quantity, and when the mind becomes more violently disordered it is totally suppressed."

Writers speak of various species of puerperal insanity, principally of two, however,—those cases in which the form is melancholia or mania, and those in which phrenitis or inflammation

of the membranes of the brain exists; the former is the true puerperal mania, and may be distinguished into two varieties, —those where fever is present, and those in which it is absent.

"Mania," says Dr. William Hunter, "is not an uncommon appearance in the course of the month, but of that species from which they generally recover. *When out of their senses, attended with fever, like paraphrenitis, they will, in all probability, die;* but when without fever, it is not fatal, though it (i. e. the fever) generally takes place before they get well. I have had several private patients, and have been called in where a great number of stimulating medicines and blisters have been administered; but they have gone on at another time talking nonsense until the disease has gone off, and they have become sensible. It is a species of madness they generally recover from, but I know of nothing of any singular service in it." "Putting together," says Dr. Gooch, "this statement of Dr. Hunter, with my own experience, I extract from it the following meaning: that there are two forms of puerperal mania, the one attended by fever, or at least—the most important part of it—a rapid pulse; the other accompanied by a very moderate disturbance of the circulation; that the latter cases, which are by far the most numerous, recover; that the former generally die. This agrees closely with my own experience."

Dr. Burrowes states that he has not seen any case attended with fever, "except when coincident with the first secretion of the milk, or where inflammation of the breasts or other parts has occurred, or upon forced weaning, where there has been abundance of milk." But this is far from being generally true. I saw two cases last year in which mania occurred before the secretion of milk, and yet the pulse was very quick, and the skin hot, with thirst, loaded tongue, &c.

In the one variety we find the attack preceded by wakefulness, excitability, headach, and after a while the mind is evidently astray; the patient may be joyous or melancholy, singing and talking incessantly, or obstinately silent, suspicious of every

one, fancying injuries and offences on the part of her husband or friends, and forgetful of her child.

The heat of the body may be slightly increased, that of the head is generally so, with a partial pain and a sense of pressure or tightness, throbbing in the temples, and noises in the ears. The skin is generally relaxed and moist, but discoloured; the face pale, the tongue whitish and loaded; the abdomen soft, and usually free from tenderness; the pulse weak and quiet; there is little, if any, sleep, and but little thirst; the bowels are torpid, and the stools unhealthy, often offensive.

In other cases we find the skin hotter, the pulse quick and small, the face often pale, sometimes flushed, the eyes red and vivid, and a delirium more resembling that of fever, with a brownish dry tongue, and sordes about the teeth.

Dr. Burrowes has described an attack of puerperal mania, somewhat different from the above, and resembling them. "In every instance, this variety has come on before the fourteenth day from delivery; it is preceded by pervigilium; the ideas are at first rapid and confused; images like those of dreams appear, and the delirium is soon confirmed by these illusions being considered as realities, and the speech and actions corresponding with these impressions. The muscular powers are rarely violently exerted, though the patient frequently attempts getting out of bed, without any fixed object; on the contrary, she generally lies supine; the countenance is rather vacant; the eyes are half-closed, or fixed on vacuity, and, when roused, follow some imaginary object; the tunica conjunctiva is often highly injected, and the pupils very little sensible to light; the head is hot; the skin soft and relaxed, and partial sweating about the throat and neck. She continually mutters incoherently; loses consciousness, except when suddenly or strongly urged; if spoken to, answers shortly, and perhaps rationally, but lapses directly into the former state of indifference; the pulse is quick and uncertain; bowels generally easily moved; lochia and secretion of milk suspended.

About the fourth or fifth day the debility is greater; there is more coma; the pulse is quicker, smaller, and more unequal, with slight subsultus; picking at surrounding objects, or the bed-clothes; averse from food or drink; insensible of evacuations; the tongue throughout presents nearly a natural appearance, though sometimes tremulous when protruded. It is usually fatal by the seventh or eight day; and if the patient survive, chronic insanity commonly supervenes, and melancholia oftener than mania" (*a*).

That active inflammation of the brain or its membranes may occur during childbed is beyond question, but as it is very rare, and does not strictly belong to the question of puerperal mania, I shall not at present enter upon its consideration.

Thus, then, we may have an attack of mania supervening upon delivery, or occurring about the fourth or fourteenth day, with or without precursory symptoms; in two varieties the main distinction appears to be in the pulse,—in one it is quick, in the other natural; the third variety resembles low fever. There are seldom any signs to indicate disease of the uterus, at the time, except that in all, the lochia and milk are diminished or suppressed. In all the varieties the stomach and bowels are much disordered. The character of the mania is not in any way peculiar to childbed.

The progress, duration, and termination, of the attack varies a good deal in different patients. Dr. Burrowes observes, that sometimes the slighter attacks which occur immediately after delivery will disappear under the operation of a smart purgative, and an opiate.

Of the ninety-two cases given by Esquirol fifty-five recovered: four recovered in the first month, seven in the second, six in the third, seven in the fourth, five in the fifth, nine in the sixth, fifteen between the sixth and twenty-fourth, two after two years. Of these thirty-eight recovered in the first

(*a*) Commentaries on Insanity, p. 371.

six months. Of thirty-seven cases given by Dr. Burrowes thirty-five recovered: nine recovered in the first month, five recovered in the second, five in the third, three in the fourth, two in the fifth, four in the sixth, one in the seventh, two in the eighth, one in the ninth, one in the twelfth, one in the fourteenth; and one in the twenty-fourth month. That is, twenty-eight recovered in the first six months. Of eighty cases by Dr. Haslam fifty recovered.

But it may continue much longer; of the cases described by Esquirol six died: one six months after delivery, one in a year, two after eighteen months, one in three years, and one in five years. In Dr. Burrowes' table, it is stated one recovered after two years, one after three years, two after four years, one after six, and one after seven years; but he states that he never met with one permanently fatuous from puerperal insanity.

Of Esquirol's ninety-two cases, six died, or one in fifteen. Of Dr. Haslam's eighty cases, fifty recovered. Of Dr. Burrowes' fifty-seven cases, ten died, or one in six: "Seven within twelve days of the access of delirium, two within seven weeks, and one after four months. Two of them had active uterine disease, and two others died of relapses after they had recovered from puerperal mania."

Thus we find that the number of cases that recover is very considerable: out of 229, 140 recovered, or more than one-half. Of ninety of those who recovered, sixty-six were cured within six months, and the remainder at irregular intervals up to two years. Some we find continued insane much longer, remaining so for four, five, six, and seven years.

But, on the other hand, a large proportion of deaths has sometimes occurred: one in fifteen at La Salpétrière, and one in six among Dr. Burrowes' cases.

I do not think, however, that any statistics from a lunatic asylum can be taken as a correct standard of the mortality in puerperal mania, for patients are not sent there until the disease is more or less chronic; now a great number of those who

recover do so within a short time after confinement, as in two cases I witnessed lately, both of which recovered from the delirium within ten days. Among the better classes a patient would not be placed in an asylum until she had recovered from her confinement, and until the ordinary treatment had failed. On the other hand, death occurs in many cases within the month after childbed. "Mania," says Dr. Gooch, "soon after delivery, is more dangerous to life, than melancholia beginning several months afterwards."

Dr. Gooch states that none of his patients with a slow or moderately excited pulse died, whereas in the fatal cases the pulse was very rapid, though some with a rapid pulse recovered. In the two cases I have referred to the pulse was very rapid, yet both recovered.

"Nights passed in sleep, a pulse slower and firmer, even though the mind continue disordered, promise safety to life. On the contrary, incessant sleeplessness, a quick, weak, fluttering pulse, and all the symptoms of increasing exhaustion, portend a fatal termination, even though the condition of mind may be apparently improved. In the cases which I have seen terminate fatally the patient has died with symptoms of exhaustion, not with those of oppressed brain, excepting only one case(*a*)."

I shall now consider the *causes* of this distressing malady. There seems little doubt that in many cases (Dr. Burrowes says in half the number, or possibly more, and Dr. Gooch bears the same testimony) the predisposition is hereditary, and of course mental deviations during gestation render an attack of puerperal mania extremely probable. Sleeplessness, which so fearfully increases nervous irritability, seems a very general predisposing cause.

Among the exciting causes we find cold, irritation, irregularities of diet, distress of mind, sudden mental shocks, frights,

(*a*) Gooch on Diseases of Woman, p. 124.

disordered bowels, excessive secretion of milk, and constitutional irritation thence arising, &c.; or the attack may form a part of or follow convulsions, as in a case which came under my care not long since.

Great stress is laid upon moral causes by the French writers. Esquirol, as I have before mentioned, states their frequency, compared with the physical, as four to one; and Georget mentions that out of seventeen cases there were but two not proceeding from a direct moral cause. During the invasion of France in 1814–15, eleven out of fourteen cases were from terror. British writers do not attribute so large an influence to this cause.

As to the *proximate cause or pathology* it is not very easy to speak positively. I may allude to four different views on the subject: 1. From its occurring, in many cases immediately after delivery, some have attributed it to disease of the uterine system. Fabret mentions a case of cancer which excited mania. Dr. Briere has related a case of mania from inflammation of the womb. Dr. Cooke discovered disease of the womb in two cases of puerperal mania. Dr. Burrowes mentions having seen abortion and mania, the result of inflammation of the womb, in two cases in which he was consulted; one died and the other recovered; and in two of the deaths in his table there was disease of the uterus, but, whether it preceded the mania or not does not appear. In one of the species of puerperal mania, described by Dr. Burns, he says, "the delirium is connected with the state of the uterus, particularly of the veins which are inflamed"(*a*).

At a meeting of the Obstetrical Society of Dublin, Dr. Montgomery mentioned a case of puerperal mania in which the uterus and ovaries were found in a state of inflammation; and Dr. Hardy another, in which peritonitis existed, but was not suspected till after death. I have certainly seen uterine inflam-

(*a*) Midwifery, p. 619.

mation follow puerperal mania, but that it existed previously I cannot say: the usual symptoms were absent.

Still these cases, which are all I have been able to make out, form so very small a proportion to the cases in which there has been no disease of the womb, that without denying the condition of the uterine system is in some way connected with puerperal mania, it is clear we cannot attribute it solely to organic disease of that organ.

2. Other writers regard the disease as inflammation of the brain or its membranes. Now it is granted, of course, that such cases do occur, but they are rare; and it is contended that, in ordinary cases puerperal mania does not arise from inflammation, and the results of *post mortem* examination are in favour of the latter opinion. Burns, Campbell, Davis, Lee, and others, speak of it as a modification of phrenitis; Burrowes, Pritchard, Gooch, &c., as not being inflammatory. The latter distinguished observer thus gives the result of his experience: "In No. 1, the disease occurred in a pale lady, without any heat of skin, or much quickness of pulse, and was not relieved by loss of blood. In No. 3, it occurred in one whose constitution was drained and enfeebled by nursing. In No. 4, it occurred in a pale woman, habitually hysterical, subject to bear dead children, from want of power to afford them life for nine months. In No. 5, it occurred in one in whom, for urgent reasons, the circulation had been reduced to the lowest ebb consistent with life. In No. 7, in one who had been living very low for a week, with such marked symptoms of the irritation of debility that, at first sight, I thought it was the close of some disease that had been overlooked. It was speedily relieved, not by cupping and purging, but by the tranquillizing and sustaining power of opium. In No. 8, the disease was treated, though with all possible prudence and moderation, as an inflammatory state of the brain, by leeches, cupping, purging, and low diet; yet the patient died, not with symptoms of oppressed brain, but with those of exhaustion; and, on

examining the body, the whole venous system was found extraordinarily empty of blood. In No. 10, the patient fell as if shot, under the stroke of the lancet; and, on examining the head, there was found no effusion, and empty blood-vessels. In No. 11, the disease came on after puerperal convulsions (a disease generally, but not always, depending on cerebral congestion), and after one of those enormous bleedings commonly practised in these cases, and no morbid appearances were discovered, after death, in the brain. These cases, if fair specimens of puerperal insanity, lead straight to the conclusion that the disease is not one of congestion or inflammation, but one of excitement without power"(*a*).

Add to this, that Esquirol found no traces of cerebral inflammation upon most careful examination.

3. Dr. Marshall Hall believes that the disease "results, in general, from all the circumstances following parturition combined, but chiefly from the united influences of intestinal irritation and loss of blood." "I am persuaded," he adds, "that real puerperal phrenitis is comparatively a rare disease, that puerperal mania is seldom of an inflammatory character, and that it is especially to be treated by those measures which are suited to the mixed case of intestinal irritation and exhaustion"(*b*). That many cases occur in patients exhausted from some cause, the extract I have given from Dr. Gooch will prove, and that the stomach and bowels are disordered in most cases is recorded by almost all writers, so that we cannot deny that Dr. M. Hall's view has much to support it. Nevertheless it does not seem to express the whole truth, nor is the want easily supplied with any degree of precision.

4. The explanation of Dr. Gooch, which I have already quoted as to the peculiar nervous susceptibility induced by the organic changes consequent on impregnation and child-bearing, although I believe it to be correct, is necessarily vague; nor

(*a*) On Diseases of Women, p. 144. (*b*) On Diseases of Females, p. 251.

is the view of Dr. Ferriar more accurate. He says: "I am inclined to consider puerperal mania as a case of conversion. During gestation and after delivery, when the milk begins to flow, the balance of the circulation is so greatly disturbed as to be liable to much disorder from the application of any exciting cause. If, therefore, cold affecting the head, violent noises, want of sleep, or uneasy thoughts, distress a puerperal patient before the determination of blood to the breasts is regularly made, the impetus may be converted to the head, and produce either hysteria or insanity, according to its force or the exciting cause."

Perhaps it is best simply to enumerate shortly the elements which may concur to produce the attack. We have the nervous shock varying in degree, but always increasing the nervous irritability, the great vascular change, the disturbance of respiration and circulation, the exhaustion, and in many cases the loss of blood; this combination must necessarily leave the nervous system in a favourable state for the operation of the exciting causes I have enumerated, and the result is mania.

The treatment of puerperal mania is very simple as regards the materials, yet requiring calmness and judgment in their application.

1. Those who regard it as any modification of phrenitis, of course recommend blood-letting, with more or less liberality. Now, from what I have said as to the nature of the disease, it will be clear that for these cases it is inadmissible, or, if ever used, it must be with extraordinary caution, and by means of leeches, in cases where there is strength and quickness of pulse, and flushing of the head and face. I have, however, never found it advisable; and Esquirol, Haslam, Gooch, Burrowes, and Pritchard, are all opposed to it. The last-named author remarks: "If we consider that the greatest danger to be apprehended for patients labouring under puerperal madness arises from a state of extreme exhaustion, that many women die from this cause within a short interval from the commencement of

the disease, and that, if they survive this period, the healthy state of the mind is in most instances restored, it will be evident that our chief endeavours must be directed to the present support of life." "Blood-letting, as a general remedy for puerperal madness, is condemned by all practical writers, on whose judgment much reliance ought to be placed"(*a*).

2. When the stomach is overloaded, when indigestible food has been taken, or even for the purpose of lowering the pulse by the shock of vomiting, emetics have been found useful. They must, however, be used with caution when the face is pale, the skin cold, and the pulse quick and weak. Dr. Gooch prefers ipecacuanha to antimonials. Dr. Burrowes recommends nauseating doses of tartar emetic, with the saline mixture and digitalis, for the purpose of reducing the violence and fury of the patient; and Dr. Beatty informs me that he has derived great advantage from tartar emetic.

3. From the almost universally disordered state of the bowels, great relief is afforded by one or two brisk purgatives of calomel, followed by castor oil or Gregory's Powder. The stools are dark-coloured, and highly offensive; and in addition to the advantage of clearing out the bowels, purgatives act admirably as derivatives from the head.

4. After the bowels have been freed, the greatest benefit will be derived from narcotics. Denman prefers small and repeated doses of opiates, but Gooch, Burrowes, and Pritchard recommend full doses, and with this I concur: ten grains of Dover's Powder, twelve drops of black drop, or an equivalent of the other preparations of opium. If opium disagrees, hyoscyamus may be given; and should sleep be induced, repeated small doses may be administered; when the head is very hot, and face flushed, we should postpone the exhibition of opium, and we must guard against constipation.

5. The head may be shaved, and a cold lotion applied; if

(*a*) On Insanity, p. 313.

the delirium continue, a blister may be applied, but it is not generally necessary,

6. In protracted cases, or when the patient is exhausted, nourishing diet, broths, &c., and even tonics, must be allowed; ammonia, with cinchona; oil of turpentine, &c.

7. As uterine inflammation not uncommonly arises in the course of, or follows puerperal mania, a close watch should be kept for the earliest symptoms, and if they appear, calomel in small and repeated doses, or mercurial inunction, should be added to the other remedies, with such other local applications as may be deemed advisable.

8. It will be necessary to keep the most careful watch upon the patient; the nurse, who ought, if possible, to be one familiar with such attacks, should never leave the room; friends ought to be absolutely refused admission; the apartment kept slightly darkened, and the entire house perfectly quiet.

9. When the mania disappears and the patient is convalescent, a change of air and scene is most advisable.

Art. IV.—*Observations on Disjunction of the lower Epiphysis of the Humerus.* By Robert William Smith, M. D., M.R.I.A., F.R.C.S., Professor of Surgery in the University of Dublin, Surgeon to the Talbot General Dispensary, Secretary to the Pathological Society of Dublin, &c.

Nothing can be of greater importance to the practical surgeon, when called upon for his opinion respecting the nature of injuries occurring in the neighbourhood of the larger articulations in early life, than an accurate acquaintance with the anatomy of the epiphyses of the long bones. Of the value of this department of anatomical knowledge, the student, generally speaking, is ignorant, and it is seldom that the lecturer draws his attention to it. The anatomical teacher describes with great, and frequently with tedious minuteness, everything relating to the skeleton of the *adult*, but usually passes over, either

lightly or altogether, the peculiarities which characterize the osseous system in the young subject.

And yet very little reflection is required to show, that unless the surgeon is familiar with the situation of the line of junction of the epiphysis with the shaft, unless he knows how much of the bone the former comprises, and what processes, &c., belong to the latter, he will be liable to great embarrassment in the diagnosis of injuries implicating the larger articulations in the earlier periods of life.

Upon a former occasion, I pointed out the error committed by Vidal (De Cassis), in supposing that the tuberosities of the humerus belonged, not to the epiphysis, but to the shaft of the bone; and showed that there was no difficulty in comprehending the occurrence of osseous union in cases of separation of the superior epiphysis of the humerus, inasmuch as it formed one body with the tuberosities, and was still connected to living tissues(*a*).

I shall now endeavour to demonstrate that a similar error has been committed with respect to the anatomy of the lower epiphysis of the humerus, and that those authors who have written upon the subject of injuries of the elbow-joint have confounded with each other two very different accidents, viz., fracture of the humerus immediately *above* the condyles, and disjunction of the inferior epiphysis of the same bone; they have omitted to describe the diagnostic signs of the latter injury, and the means by which we are to distinguish it from luxation of both bones of the fore-arm backwards at the elbow, evidently from being unacquainted with the simple anatomical fact, *that the lower epiphysis of the humerus does not include the condyles, which belong entirely to the shaft of the bone.*

So complete is this ignorance upon the part of M. Malgaigne (who has recently published upon the subject of fractures), that he has included separation of the lower epiphysis

(*a*) See Treatise on Fractures, &c., p. 202.

of the humerus among the *supra-condyloid fractures* of that bone. The evidence of the truth of this assertion is contained in the following passage:

"*Fractures sus-condyliennes de l'Humerus.*—Je désigne sous ce nom ce que Dupuytren appelait *fracture de l'extrémité inférieure de l'humérus*, afin d'établir plus de précision et d'exactitude dans le language. C'est donc une solution de continuité qui sépare toute l'extrémité articulaire du corps de l'os, sans pénétrer dans la jointure; et ches les enfants, qui y sont plus sujets que les adultes, il y a probablement, dans beaucoup de cas, une disjunction de l'épiphyse"(*a*).

M. Malgaigne would have acted wisely, had he made himself acquainted with the anatomy of the bone in the young subject, before he attempted to establish "PLUS DE précision et d'exactitude," in the language employed by Dupuytren.

Having committed the great and fundamental mistake of including among the supra-condyloid fractures, fracture through the line of the epiphysis, it was difficult to avoid the equally glaring error of distinguishing these two injuries from luxation of the bones of the fore-arm backwards, by the same diagnostic sign; here, however, he has only followed the example of other authors: "Quel que soit la saillie de l'olécrâne en arrière, elle ne jamais plus éloignée des tubérosités humérales que dans l'état naturel, s'il y a fracture; elle l'est beaucoup s'il y a luxation"(*b*).

Precisely the same error has been committed by Vidal (De Cassis), who, having alluded to the close resemblance between dislocation of both bones of the fore-arm backwards and cases of separation of the lower extremity of the humerus, "*soit par une fracture, soit par un décollement d'épiphyse,*" then adds: "Dans la luxation, l'apophyse olécrâne a perdus ses rapports normaux avec les tubérosités que surmontent en

(*a*) *Traité des Fractures et des Luxations*, 1847, p. 542.
(*b*) *Loc. cit.* p. 544.

dedans et en dehors les surfaces articulaires inférieurs de l'humérus; ces tubérosités restent sur la ligne représentant l'axe de l'humérus. Dans la fracture, ces saillies osseuses, situées en arriére de l'axe de l'humérus, conservent leurs rapports naturels avec l'olécrâne"(*a*).

In the article, "Abnormal Conditions of the Elbow-joint," published by Mr. Adams, in the Cyclopædia of Anatomy, the author has remarked, that when the humerus is fractured transversely, immediately above its condyles, *or*, *in young subjects through its lower epiphysis*, the phenomena which result in either case closely resemble those which accompany a luxation forwards of the inferior extremity of the bone; but that, in the case of fracture, *the deformity is not accompanied by any changes of the normal relations existing between the olecranon and the condyles*(*b*). Subsequently he adds: "The transverse fracture of the lower extremity of the humerus, *or a forcible separation of its lower epiphysis*, are accidents most liable to be confounded with luxation of both bones backwards; but, although the elbow projects much backwards, and there is a marked prominence in front, still the relative position of the condyles of the humerus and the olecranon process is not altered in the fracture, as they have already been described to be in the luxation"(*c*). Neither does Baron Dupuytren allude to the separation of the epiphysis as an accident distinct in its character from other fractures of the lower extremity of the humerus, or as being that form of injury which bears the greatest resemblance to dislocation backwards of the bones of the forearm; on the contrary, he applies the same description to all fractures occurring *immediately above the elbow-joint*, and distinguishes them all from luxation by the same diagnostic signs. He remarks that, whatever time may have elapsed after the

(*a*) *Traité de Pathologie Externe*, tom. ii. p. 109, par Aug. Vidal (De Cassis).

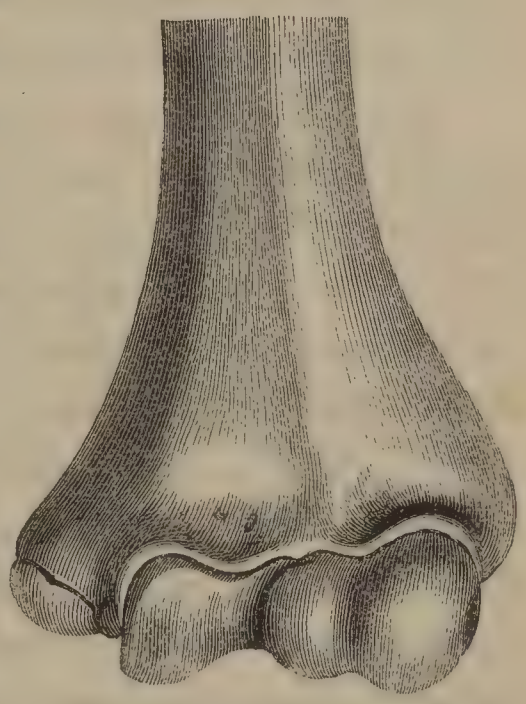
(*b*) Cyclopædia of Anatomy and Physiology, vol. ii. p. 68.

(*c*) *Op. cit.* p. 70.

receipt of the injury, there is an anatomical sign which appears to be infallible and "aussi sûr que l'anatomie"(*a*), viz.: whatever may be the prominence of the olecranon posteriorly, it is never further distant from the condyles of the humerus than in the normal condition of the parts, in the case of fracture, but that in dislocation the separation is very considerable.

The preceding extracts from the works of some of the most celebrated authors upon the subject of fractures, are, I should think, sufficient to show that disjunction of the lower epiphysis of the humerus (of which I find no particular mention made either by Boyer or Sir A. Cooper) is an accident which has hitherto been confounded with fracture immediately *above* the condyles, an error from which it may be inferred, I think, that the exact line of junction of the epiphysis with the shaft of the bone is not generally known to surgeons.

At all events, it is manifest that, by the authors from whose writings I have quoted, this line has been supposed to traverse the bone *above* the condyles; whereas the anatomical fact is, *that these processes belong exclusively to the shaft of the bone, and form no portion whatever of the epiphysis, which comprises nothing but the capitulum and the trochlea.* The line which marks its junction with the shaft is directed obliquely downwards and inwards, terminating below and external to the epicondyle, which, in the young subject, is distinct both from the epiphysis and from the shaft.



The lower articular surface of the humerus in the young skeleton differs from that of the adult bone in the following

(*a*) *Leçons Orales*, tom. iii. p. 399.

remarkable particular, namely, that the capitulum, or that portion which articulates with the head of the radius, is nearly double the size of the trochlea; so that the inferior surface of the former is nearly upon the same level as that of the latter process; and the humerus, when placed resting by its lower extremity upon a horizontal plane, assumes nearly a vertical position: in short, the radial is fully developed long before the ulnar portion of the epiphysis, and, as will hereafter appear, the knowledge of this fact is not destitute of practical importance in the diagnosis of that embarrassing accident, fracture through the line of junction of the epiphysis with the shaft, or, in other words, fracture of the humerus immediately *below* the condyles.

A description of the signs which characterize this lesion must also be, to a certain extent, an enumeration of those which accompany dislocation of both bones of the fore-arm backwards; many of the symptoms likewise belong to the transverse fracture, immediately *above* the condyles.

The injury usually results from a fall upon the elbow, but I have known it to occur from a fall upon the palm of the hand, the fore-arm being at the time extended upon the arm. The limb immediately becomes powerless, severe pain is experienced in the elbow, and the following signs present themselves:—The fore-arm is flexed, and the hand in a middle position between supination and pronation. The olecranon, drawn upwards and backwards by the triceps muscle, mounts above the level of the condyles of the humerus, these three processes forming the points of a triangle, the base of which is below. The antero-posterior diameter of the elbow is greatly increased, and the lower end of the humerus can be felt projecting in front. The application of a gentle force is usually sufficient to restore the normal appearances of the limb, but when the parts are abandoned to themselves the deformity soon recurs. If, after the removal of the displacement by extension, the fore-arm be rotated upon the humerus, or if the surgeon,

as recommended by Dupuytren, grasps the arm in one hand, and the fore-arm in the other, and then moves them backwards and forwards upon each other, the crepitus which characterizes fracture can generally be elicited. The motions of flexion and extension are exceedingly limited, and any attempt upon the part of the surgeon to communicate them produces severe pain.

The signs above enumerated are sufficient to demonstrate that the injury in question may readily be confounded with transverse fracture of the humerus above the condyles, or with luxation of the fore-arm backwards. The former would be a mistake of comparatively slight importance, inasmuch as the same treatment is applicable to both lesions; but the latter must be considered as a grievous error, the results of which are nearly as lamentable as those of leaving a true luxation of the joint unreduced. The observations of Dupuytren respecting the danger of confounding fracture immediately *above* the elbow with dislocation backwards, apply with peculiar force to the injury we are considering.

"If," says this distinguished surgeon, "the opinion that the case is one of luxation be acted upon, extension and counter-extension are employed, the reduction is accomplished without much difficulty, a roller is applied, and the surgeon congratulates himself upon the ease with which he has restored the bones to their places. But soon the displacement is reproduced, and at the end of a few days, in the midst of the swelling, something unnatural is felt. This accident is generally ascribed to the patient, who is charged with being intractable: the reduction is again effected, but the deformity soon recurs, and considerable swelling then supervenes. As long as this condition lasts, the surgeon continues secure; but when the swelling has disappeared, after the lapse of a few weeks, he discovers the error which he has committed, but the mischief cannot now be repaired, the motions of the joint are never perfectly regained, and the deformity is incurable."

As the loss of the normal relation between the olecranon and the condyles renders the separation of the epiphysis peculiarly liable to be confounded with dislocation of the fore-arm backwards, and as it is obviously a matter of the utmost importance to distinguish carefully between these accidents, let us now consider the signs, by availing ourselves of which we materially diminish the chance of mistaking it either for luxation, or for fracture above the condyles.

In case of fracture traversing the line of the epiphysis, the transverse diameter of the tumour which projects in front is equal to that of the opposite humerus, measured anteriorly from condyle to condyle; in this respect the accident resembles the dislocation of both bones backwards, but differs from fracture *above* the condyles. The outline of this osseous tumour is rounded, presents to the feel none of the irregularities or sharpness of an ordinary fracture, and upon its inferior surface, which is convex, and limited at either extremity by the condyles, neither trochlea nor capitulum can be distinguished.

When the joint is viewed posteriorly, two osseous prominences are seen, and can be distinctly felt; they are both placed above and behind the plane of the condyles, but are themselves situated (if the patient be not more than six or eight years of age) nearly upon the same level, the internal, however, being always a little higher up than the external. At a more advanced age the distance between these two prominences is observed to be greater, in consequence of the increased development of the internal, which is formed by the olecranon, the summit of which process grows by an epiphysis.

At no period of life, however, at which it is possible for the accident in question to happen, is the distance between the two projections nearly as great as it is always found to be between those which, in cases of luxation of both bones of the fore-arm backwards, constitute so marked a feature of the injury. In the latter accident the distance averages about one inch and a half, while in the former it is seldom more than three

quarters of an inch; the external tumour, in this case, being formed by the *capitulum of the humerus*, still surmounting the head of the radius, for which, in consequence of the concave form of its superior surface, it is extremely liable to be mistaken, if attention be not paid to the diagnostic sign which has just been mentioned.

For the history of the following case I am indebted to my friend, Dr. James S. Hughes, one of the surgeons of Jervis-street Hospital:

Michael Fleet, æt. 12, was admitted into Jervis-street Hospital on the 24th of August, 1847. He stated that whilst standing in the Fruit Market, a boy, running against him with great violence, threw him down, and that having, in the act of falling, stretched out his arm to save himself, the other boy fell with all his weight across the back of the extended limb. On his being raised from the ground, it was found that his arm was powerless, and he was at once brought to the hospital, where he was seen by Dr. Hughes, in twenty minutes after the occurrence of the accident, and consequently before the characteristic features of the injury had become obscured by swelling.

The fore-arm was semiflexed, and the hand in the position of half supination; the olecranon, which formed a remarkable projection, was placed above and behind the condyles of the humerus. A second osseous tumour, the upper surface of which was concave, and which was supposed at first to be the head of the radius, could be distinguished behind the outer condyle. The lower extremity of the humerus formed a considerable prominence in front.

Judging from these appearances, Dr. Hughes' first impression was, that he had to deal with a case of dislocation of both bones of the fore-arm backwards, but finding that the joint admitted of a much greater amount of flexion than can usually be communicated to it in such cases, he began to suspect the existence of a fracture. Extension was, therefore, made by an assistant,

while Dr. Hughes, grasping the arm with one hand, and the fore-arm with the other, moved them in opposite directions, and thus succeeded in producing a distinct crepitus. The diagnosis was therefore made, that the injury consisted in a fracture of the humerus through the line of junction of the epiphysis with the shaft, with displacement of the bones of the fore-arm, *along with the epiphysis*, upwards and backwards.

A moderate degree of extension and counter-extension was sufficient to remove the deformity; the limb was placed in the semiflexed position, and secured by angular splints and a roller. It was, however, found extremely difficult to prevent a recurrence of the deformity, and when the patient left the hospital, a slight degree of displacement still existed. Shortly after his dismissal I saw him, in consultation with Dr. Hughes and Dr. Power, and having made a very accurate examination of the limb, I came to the conclusion that the original injury had consisted in a simple disjunction of the epiphysis; for although the deformity was now not considerable, the principal characteristic features of this lesion, as they have been described in the preceding pages, could still be recognised. The boy had recovered very considerable use of the limb; he was able to extend the fore-arm perfectly, and could flex it beyond a right angle. The antero-posterior diameter of the joint was greater than that of the opposite side; the tendon of the triceps was in relief; the outline of the tumour which projected in front was rounded, but it was impossible to feel distinctly either the capitulum or the trochlea of the humerus. Two osseous tumours, formed by the olecranon and the capitulum, were seen posteriorly; but although they were still situated somewhat behind the plane, they were not now above the level of the condyles. The callus which had been effused, obscured, in some degree, the features of the injury. About this time the patient was also seen by Mr. Adams, who adopted the same views as to the nature of the accident.

From what has been stated in the preceding pages, it is

manifest that (contrary to what the statement of authors would lead us to infer) implicit reliance is not to be placed upon the loss of the normal relation between the olecranon and the condyles of the humerus, as a means of distinguishing between luxation of the fore-arm backwards, and fracture of the lower extremity of the humerus. It is evident that there is an accident of the elbow, in which the bones of the fore-arm lose their natural relations to the condyles, and yet that accident is not necessarily a dislocation, but may be a fracture through the line of the lower epiphysis of the humerus, which line is situated *below* the condyles.

The importance of being familiar with the anatomy of the epiphyses of the long bones need not therefore be again alluded to; I may, however, be permitted to remark, that it is also a matter of practical advantage to be acquainted with the periods at which the different epiphyses unite with the shafts of the bones to which they belong; for instance, the lower epiphysis of the humerus becomes identified with the shaft long before the superior: the separation of the latter by external violence may, therefore, occur at a period of life when the disjunction of the former would be impossible.

I shall terminate this brief notice of fracture through the line of the lower epiphysis of the humerus, by stating as concisely as possible the points of resemblance and dissimilarity between it and the two injuries with which it is most liable to be confounded, viz., fracture immediately *above* the condyles, and luxation of both bones of the fore-arm backwards.

The symptoms which belong to it in common with fracture above the condyles are the following:—shortening; crepitus; the removal of the deformity by extension, and its tendency to recur when the extending force is relaxed; the presence of an osseous tumour in front of the joint; the increase in the antero-posterior diameter of the elbow.

It differs from the supra-condyloid fracture in the greater transverse breadth and regular convex outline of the anterior

tumour; in the existence of two tumours posteriorly; in the loss of the normal relation of the olecranon to the condyles.

It resembles dislocation of both bones of the fore-arm backwards, in the following particulars:

The transverse diameter of the anterior tumour is the same in each case; so also is the antero-posterior breadth of the elbow; and in both the olecranon ascends above the condyles, the limb is shortened, and two osseous prominences can be distinguished posteriorly.

It differs, however, from luxation in the existence of crepitus, the tendency of the deformity to recur, in the anterior tumour being destitute of trochlea and capitulum, and in the circumstance of the two posterior tumours being nearly upon the same level.

Art. V.—*Cases of Thoracic Disease, with Remarks on some of the Difficulties which occasionally exist in the Diagnosis of Phthisis in its early Stage.* By Thomas Fitzpatrick, M. D., Licentiate of the King and Queen's College of Physicians; formerly Physician to the Dublin General Dispensary.

It is the duty of the practising physician, who meets with cases remarkable for the obscurity of their symptoms, or rarity in their subsequent pathological appearances, to give a faithful record of them to the profession. Acting on this principle, I select from my note-book the following cases, and detail them in as brief a manner as is consistent with an accurate account of their leading features.

Miss ——, aged 26, of dark complexion and delicate habit, without any hereditary predisposition to phthisis, and who had generally enjoyed good health, with the exception of having been subject to an eruption of lepra on the lower extremities two years before, came under my care, in September, 1836, for an attack of fever, in which the gastro-intestinal and bronchial mucous membranes were principally engaged;

she recovered under ordinary treatment, in about a fortnight, a slight cough only remaining, for which I directed her removal to the country. This patient again consulted me in the following November. During the interval her general health had been much improved, but the cough was not completely removed. A few days previous to my visit, after exposure to cold and damp, she was attacked with headach, restlessness, dyspnœa, and frequent cough, with copious expectoration of thin frothy mucus. The tongue was clean, bowels regular, pulse 95; the chest sounded clear on percussion, except over a space extending from the left clavicle to the inferior margin of the second rib, where it was decidedly dull; in this situation the respiration was feeble, and accompanied by a muco-crepitating râle; these phenomena were observed posteriorly over a space corresponding with that anteriorly; in the remaining portion of the left lung the respiration was pure, but more feeble than in the right lung, over the whole of which it had a puerile character, without any rhoncus: there was no evidence of any affection of the heart, nor did she complain of any pain in the chest. The antiphlogistic treatment, including local abstraction of blood, the use of tartar emetic, &c., was steadily employed, but without any relief of the symptoms, to which was now added the occasional appearance of dark-coloured blood, mixed with the sputa; subsequently counter-irritation on the chest was used, and a combination of blue pill and ipecacuanha administered so as slightly to affect the mouth.

In the course of December all the symptoms became aggravated; the cough frequent, with severe dyspnœa, occasionally amounting to orthopnœa; the physical signs presented the same character as already described, but in a more marked degree, the râle now approaching the character of gargouillement; bronchial respiration was not observable over the site of dulness. The expectoration became more profuse, being upwards of a pint in the day; it was more tenacious than in the early stage of the disease, and bore a great resemblance to raw

white of egg. On the 30th of December the report is as follows: remarkable emaciation; face pallid; got but little sleep in the night, being unable to lie down; cough frequent and dyspnœa very distressing, particularly increased when the patient attempted to lie on her right side; the left cheek and side of the neck extending to the clavicle are œdematous, this symptom not being observed in any other part of the body; no complaint of pain is made; tongue white and moist; bowels confined; pulse 105, regular and compressible. She was ordered a purgative, a pill consisting of digitalis, squill, ipecacuanha, and blue pill, was administered every six hours, and a blister was applied to the chest; by these remedies the œdema was entirely removed, but without improvement in the other symptoms. Early in January a consultation was held, and the compound iron mixture with laurel water was ordered, also a syrup containing muriate of morphia, to relieve the cough. These remedies were exhibited for two days, and then discontinued, as under their use the symptoms of the disease became much aggravated and the fever was increased. Having taken measures to moderate the latter, I ordered a few days subsequently a draught consisting of one grain of iodide of potassium, and eight drops of tincture of digitalis in an ounce of cinnamon water, to be taken three times a day.

The effect of this treatment was most surprising; in a few days a marked amelioration in her state was observable, and the dose of the iodide having been gradually increased, the patient was in about a month restored to perfect health. In a month afterwards, I examined the chest; the dulness on percussion was removed, but the respiration in the upper portion of the left lung was more feeble than natural, and particularly so as compared with that in the right.

On the 9th of the following July I was again called to see this patient. She had been at a party a few nights before, and, after dancing, and leaving a heated room, was exposed to cold and rain. The symptoms, which were those of bronchitis,

confined to the left lung, did not yield to ordinary treatment, and in a few days the general symptoms and physical signs, as before described, were fully developed, and the patient became sensible "that her old complaint had returned." It is unnecessary to describe minutely the progress of the case; let it suffice to say, that cough, dyspnœa, and profuse expectoration, as before, were the prominent symptoms. The fever was of the adynamic character, and at no time presented the features of pure hectic. The dulness under the left clavicle increased, and the muco-crepitating râle returned; œdema commenced in the left side of the face and neck, and extended to the left arm, and, subsequently, general anasarca was established. About a fortnight before her death large spots, resembling purpura hæmorrhagica, appeared on the extremities, and, worn out by cough, orthopnœa, and debility, she died on the 22nd of the following November. I obtained a *post mortem* examination thirty-six hours after death, and was assisted by my friend Mr. Hamilton; but I regret it was, of necessity, not as minute as was desirable in so interesting a case, being merely confined to an examination of the cavity of the thorax. The right lung was collapsed and healthy in appearance; the left lung was prominent, and the superior two-thirds presented a dark purple appearance, the remaining third being rather of a dark red colour. There was no foreign deposit or hepatization in either lung. Some effusion was found in the left pleura. On making a section of the left lung, a sero-sanguineous fluid escaped at innumerable points. The lung had a remarkable greasy feel; its natural crepitation was in some degree diminished; it did not sink in water, but, by comparison with a portion of the right lung, its specific gravity was evidently increased. The bronchial mucous membrane appeared softer than natural, and presented small distinct spots of ecchymosis. The heart and great vessels were healthy.

J. B., aged 35, of spare habit, but muscular, enjoyed good

health till the month of August, when, after exposure to cold, he was attacked with slight rigors, headache, dyspnœa, and cough. About this period, an old and extensive ulceration on the leg, which had been discharging for a long period, healed; and although he was relieved of the most prominent symptoms by treatment, he continued subject to slight cough, dyspnœa, and general debility. On the 30th of November, when he first came under my notice, he presented the following symptoms:—Countenance pale, anxious, and emaciated; tongue white, and moist; he complains of general weakness, dyspnœa, and inability to lie on the left side; he has an occasional cough, with moderate expectoration of mucus. He denies the existence of hectic symptoms. On percussion the chest is resonant, except under the left clavicle, where it is dull; the dulness extends below the first rib, and is more marked towards the sternum than the axilla. The respiration is healthy over the whole of the right lung; at the upper portion of the left it is feeble; in approaching the base of the lung the respiration is observed to have more of the natural character. Action of heart natural; pulse 108, and small. During the months of December and January all his symptoms were gradually aggravated, he lost flesh rapidly, the dulness under the left clavicle increased, and he complained of a remarkable soreness in this situation, which amounted to severe pain when percussion was employed. The feebleness of respiration in the upper part of the left lung became more marked, and a slight mucous râle was observed in this situation. The character of the expectoration varied, being at one time opaque and dark-coloured, at another, slightly puriform, but it never was completely puriform. In the middle of January œdema was observed on the left side of the face, neck, and thorax. The pulse averaged about 120, the cough increased in frequency, the dyspnœa became most distressing, and he died early in February, all treatment having failed to procure any alleviation of his sufferings.

Post Mortem Appearances.—The right lung was healthy, and neither in it nor the left were there any tubercles or other foreign deposit. The upper part of the left lung was in a state of condensation, from the pressure of a tumour which was situated in the posterior mediastinum; it was encephaloid in character, and intimately connected with the bronchial glands, which had coalesced, and formed a small ring round the trachea; while the tumour bulged out on the left side to the size of a small orange. The heart and great vessels were healthy, and also the abdominal viscera, with the exception of the liver, in which a tumour similar to that in the mediastinum, but of a firmer consistence, was found.

These cases suggest some points of interest in relation to diagnosis, but, before alluding to this part of the subject, it may be well to investigate the nature of the pathological condition of the left lung, in the first case. It appears to me to occupy a place between the acute congestion described by Fournet, and the blue pneumonia noticed by Dr. Corrigan. Its principal characters belong more to congestion than to inflammation. One question of interest is, was there any analogy between it and the disease of the skin, from which the patient had previously suffered. Mr. Addison, in a paper published in the eleventh volume of the Transactions of the Provincial Medical and Surgical Association, observes, "that there is no distinction whatever between the spots of lepra in the skin and tubercles in the lungs, if we except the difference arising from the different situations of the two tissues." The essential character of both diseases he believes "to be an abnormal accumulation of epithelium-cells, which produce more injury in the lungs than on the skin, on account of the delicacy, vascularity, and functional importance of the former, and also because the accumulation cannot readily be discharged." I have quoted this passage merely to show that an analogy has been already drawn between lepra and disease of the lungs; for I think that, in researches as to the morbid alterations in

tissues, due regard should be paid to the diathesis of the patient, because microscopic observations alone cannot explain their variations. I believe that in the present case the most correct view to take is, to consider the disease of the same character as that described by Fournet, but in a chronic form.

With regard to the second case my observations shall be brief, as the subject of intra-thoracic tumours has, of late years, received much elucidation, particularly from the valuable contributions of the late Dr. Greene. It is chiefly remarkable, from the absence of some of the principal symptoms observed in cases of thoracic tumours, but which can be easily accounted for, as the growth of the tumour being towards the lung, it produced no marked influence on the trachea or œsophagus.

We now come to the investigation of one of the most important questions arising from the consideration of these cases. Supposing two other cases similar in character to come under observation, do we possess the means of forming a diagnosis between them? or could we decide in their early stage on the non-existence of tubercular development?

Let us pause to reflect on the symptoms and signs common to both; some degree of fever, emaciation, dyspnœa, cough and expectoration, partial œdema, dulness on percussion under the clavicle, and circumscribed muco-crepitating râle. Here we have many of the general symptoms and signs of phthisis. In the advanced stage, however, we have not the hectic fever, marked acceleration of pulse, and puriform expectoration, as in ordinary phthisis; while the absence of flattening of the side of the thorax, and of bronchial respiration, contra-indicates the existence of cirrhosis.

As the opinion that phthisis is not merely a disease of the lungs has many supporters, it would appear the safest course to consider that the general symptoms ought to have the most marked influence on our diagnosis, for, notwithstanding the researches of late investigators, the discovery of phthisis in

the earliest stage is still beset with doubts and difficulties, and we often find that too nice an appreciation of deviations from normal functions, leading to an unfavourable prognosis, has insured an after-triumph to some empiric, or other pretender to medical art. The doctrines of Fournet, in relation to this subject, are too abstruse in character; his attempt to determine the intensity, duration, and quality of the pulmonary sound, necessarily failed. Increased expiration can only be regarded as an adjunct to the diagnosis of phthisis, and is not confined to the development of tubercles in the lungs.

It is but justice to this author to observe that he admits the physical signs he offers in aid of diagnosis, are not of general application, and even throws a doubt on their value, unless supported by general symptoms. Are we then to assume, that the observation of physical changes of the respiration, in the earlier stages of phthisis, are useless? By no means. Comparative observation, not only between each lung, but between different parts of the same lung, should never be neglected, and is often of the greatest value; but the important point which ought to be kept in view is, that our knowledge of the subject derived from physical examination is as yet imperfect, and *per se* unworthy of reliance in forming a prognosis.

The following case exemplifies the absence of any appreciable sign until an advanced period of the disease. A lady, aged 23, with light hair, delicate skin, florid complexion, and a marked hereditary predisposition to phthisis, came under my care in the spring of 1844. She presented the general symptoms of phthisis, but neither auscultation nor percussion could detect any abnormal condition of the lungs, with the exception of supplementary respiration at the upper portion of the left lung. This patient was, in two months, restored to health under ordinary treatment, including the application of a spirituous lotion to the chest, but in a manner somewhat different from that recommended by Dr. Marshall Hall. It had been previously suggested to me by Sir Henry Marsh, and, as I have found it of

great benefit in similar cases, I shall mention the mode of application. A piece of thin flannel is to be wrung out of boiling water and immediately immersed in a small quantity of spirit of wine containing some perfume, rapidly wrung again, and applied warm to the chest; it is to be carefully covered over with oil silk, and changed three or four times a day. In May, 1845, this patient was attacked with similar symptoms, but on this occasion she thought that the approaching fine weather and change of air would be sufficient remedies without medical aid. In the month of June I was hastily summoned to visit her, as she had been suddenly seized with profuse hemorrhage from the chest. General bleeding, &c., succeeded in arresting the hemorrhage, but its cessation was not accompanied by relief to the general symptoms. I was convinced tubercles existed in the left lung, but frequent examination, for about a month, failed to give any evidence from auscultation, more than exaggerated respiration in the upper portion of the left, and, in a less marked degree, the same phenomenon in the right lung. At length I observed dulness on percussion and bronchial respiration inferior and external to the left mamma; in this situation a large cavity was subsequently established, but it was not till near the close of the patient's existence that satisfactory signs of tubercular development in the upper part of the left lung were afforded.

I shall now mention a physical sign, from which, in conjunction with marked general symptoms, I formed, in two doubtful cases, a diagnosis of incipient phthisis. I bring it forward under the disadvantage of not having had an opportunity of testing the accuracy of the theory of its production by *post mortem* examination. Great difference of opinion exists as to the situation in which healthy bronchial respiration is usually observed. Fournet limits the seat of natural bronchial respiration to the interscapular region, as being the only part in which it is usually audible. Dr. Williams is of opinion, that, over a space extending one or two inches on each

side of the sternum, the respiration in the healthy state is of the bronchial character; while Dr. Walshe thinks it is confined to the surface over the upper part of the bone. I have investigated this point in many cases, particularly in examinations for life assurance, and I feel satisfied there can be no general law in relation to it, as far as regards the anterior part of the chest. In some persons, particularly those with well-developed chests, marked muscular fibre, and deposit of fat, the respiration, even under the upper part of the sternum, has not a bronchial character to the ear; while, in persons of spare habit, nervous temperament, imperfect muscular development, and narrow chests, this phenomenon is almost constantly observed under the second bone of the sternum, and confined to about one inch or less on each side of that bone. I have not found any difference in the extent of surface on each side from a central point on the bone, in which (in healthy persons) the bronchial character is preserved; and I regard a discrepancy from this law as affording evidence of an increased density of the lung, conveying to the ear the normal bronchial respiration, at a greater distance from the centre of the sternum on one side than the other. It is almost unnecessary to observe, that it is not to be confounded with the ordinary bronchial respiration frequently heard under the clavicle, in a stage of phthisis so advanced as to render the diagnosis comparatively easy, when it is accompanied by dulness on percussion. Besides it differs somewhat in character, being less harsh and tubular to the ear, and sometimes accompanied by ordinary vesicular respiration under the stethoscope.

The first case in which I observed this sign was one examined by me at the request of a friend, in consequence of its obscure character, the general symptoms of phthisis existing without the presence of physical signs. The chest was everywhere resonant on percussion; but I observed bronchial respiration over a greater surface to the left of the sternum than ordinary; on placing the stethoscope over the corresponding

part on the right side, the respiration was vesicular, and measurement demonstrated that the bronchial character of respiration extended nearly an inch more to the left than the right of the sternum. I therefore concluded that tubercles were developed in the centre and sternal extremity of the lung, either so diffused or so insufficient in quantity as not to cause dulness on percussion, yet capable of acting as the medium of conveying bronchial respiration to the ear. I consequently made the diagnosis of phthisis. I lost sight of this patient at the time, but learned that she died of that disease, in the country, a few months afterwards.

The second case was under my own care. Dulness on percussion, with ordinary bronchial respiration, succeeded the sign. Cavernous respiration was ultimately established, and the patient died from well-marked phthisis, but I could not prevail on his friends to permit a *post mortem* examination.

I have been latterly anxious to find an additional case presenting this character of bronchial respiration, but have only so far succeeded as to meet with one which, although bearing an analogy, was not an example. It was that of a lady labouring under synovitis of the hip-joint, who had a slightly elevated tumour, in size about a square inch, beneath the clavicle, and close to the sternum. Under the site of this tumour there was a marked difference in the pulmonary sound. Dr. Stokes, who saw this case with me, considered the sound as circumscribed, puerile respiration ; and an interesting question arose, whether the tumour caused any alteration in the lung, or merely served as a conducting agent in impressing the ear with exaggerated respiration. The patient has not, since that time, now some months ago, exhibited any symptom of disease in the chest.

In alluding, in this hurried manner, to some of the difficulties which surround the investigation of incipient phthisis, my object is to stimulate others to extended observation. There can be no doubt of the interest and importance of the subject. How many mistakes in diagnosis occur? How de-

ficient are our therapeutic means to oppose the progress of this awful disease?

He who shall discover unerring tests of early tubercular development in the lungs, and give us confidence in our prognosis, who shall teach us the use of appropriate remedies and when to hope for benefit from treatment, will deserve to be ranked among those whose names are identified with honour to medical science and utility to mankind.

Art. VI.—*On some of the Forms of Paralysis which occur in early Life.* By Henry Kennedy, M. R. I. A., Fellow of the King's and Queen's College of Physicians in Ireland, Temporary Physician to the Cork-street Hospital.

In the following essay I wish to direct attention briefly to some of the forms of paralysis met with in infants and young persons. Eight years ago a few remarks were published by me on this subject, which happening to attract some notice at home and abroad, induced me to pay more attention to it since then than I might otherwise have done. Previously to that time the subject had been noticed in the most cursory way, and I believe only in the work of Underwood. Since then it has been taken up by Dr. West in his admirable series of lectures; also in the elaborate work on the Diseases of Children, by Rilliet and Barthez; and by M'Cormac, Todd, Copeland, and others. It still, however, presents a wide and open field, and in again bringing it under notice, I shall merely premise that I am not about to speak of the paralysis met with in new-born infants, and usually arising from congestion; this part of the subject has been already most ably handled by Dr. Evory Kennedy, and subsequently by Dr. Doherty, now Professor of Midwifery in Galway. The following remarks, then, apply to infants at the breast and to young persons up to the age of fifteen, presupposing that they are not affected with any organic disease.

Paralysis, in early life, exhibits itself to our notice under

different forms, and it is essentially necessary that these should be distinguished from each other. The first, and what, in the strictest sense of the term, may be called temporary paralysis, is of tolerably frequent occurrence. It is met with in infants usually between the age of five and nine months; but it occurs at both an earlier and later period than this. It is remarkable for the suddenness of its invasion, and, as far as I have seen, for the fact, that it is most common in healthy, well-thriven children. An infant, to all appearance in the best health, will be put to bed, and on awaking it is observed that it has lost the power of moving a limb. Generally only a single extremity is so affected, and it is more common for the arm to be so than the leg; though possibly this may be explained by supposing that the lower extremity may be paralysed, and yet not attract notice, on account of the age of the infant. Though we have not the word of the child for it, there can be little doubt that the limb is really paralysed. The mother or nurse observes that it is not moved as it previously was, and that no inducement or excitement stimulates the child to move it. If the arm be held up, and then let go, it will drop to the side, precisely as a discharged electrometer would do; and what is really curious is, that there is a sort of expression conveyed, which can scarcely be overlooked. I am somewhat at a loss to explain this, but if any one will call to mind a state of blindness, when, to all appearance, nothing is wrong with the eyes, he will get an idea of what is meant.

In these cases I have not been able to detect any difference in the temperature of the two limbs; though it must be added that this point has not been ascertained in the only way in which such should be done, that is, by the thermometer.

Similar remarks to those just made on the arm apply also to the leg; of course making allowance for the different office it performs. If the child have begun to put the limbs under it, it is now observed that one of them is useless, and that it drags, as it were, in a way precisely analogous to what is seen in the

adult: or if it have been previously creeping about, the infant appears to take on a sedateness of character. In this state the limb may be freely handled, without the child appearing to mind it. But this is not always the case, for now and then pain is superadded, and this constitutes a second phase of the disease. When it occurs, the sensibility of the part is wonderfully increased and the child does not allow the limb to be touched. Under these circumstances it occasionally happens that the limb is contracted, and kept up close to the body; and indeed unless we knew that a precisely similar state is seen in the adult, it might be fairly questioned whether such a state was one of paralysis at all. It is worthy of notice that the state of contraction may follow that of paralysis, or the latter may follow the state of contraction. The following case was an example of the last of these forms.

Case I.—A boy of three and a half years old, a perfect model in shape, became affected in March, 1847, with lameness, but at first in a very slight degree. This was observed in the morning. As the day wore on, however, the lameness increased, and before evening the left leg had become so painful that the child lay on a sofa, constantly crying. In this state the leg was drawn up close to the body, and any attempt to touch it appeared to give great pain, which, as well as I could ascertain, was referred to the knee. The child was slightly feverish, the skin being somewhat hot, and the tongue furred. The bowels too were confined. A warm bath and some aperient medicine were directed. The little patient was scarcely put into the former before the pain was lessened, and on being taken out he immediately fell asleep, and continued so during the night, without having got any of the medicine directed. On awaking in the morning the pain recurred, and he now got the aperient ordered the evening before, and which had to be repeated before it acted. It was obvious the bowels had been much confined. A second bath afforded another night's rest, though not so good as the first; and the following morning,

that is the third of the attack, all pain seemed to have ceased; but it was now found that the limb was paralysed: the child, however, allowing it to be freely handled, and moved in any direction. In this state he lay two days on a sofa, without the slightest apparent wish to move. On the third, by dint of coaxing, and the promise of a plaything, he was induced to put the limb under him. In this way he walked lame for a day or two, and so the attack passed off. The tongue all through remained furred, and, as soon as the severe pain ceased, the child had some slight appetite.

This was a well-marked example of one of the forms of paralysis now under consideration. It will be observed that the first thing noticed about the child was the occurrence of lameness; this was shortly followed by a state of contraction of the limb, attended, at the same time, with exquisite sensibility; and this again was succeeded by a paralytic state. As far as I have observed, a state of paralysis of the same part very commonly follows one of severe pain. Thus, after acute rheumatism has subsided, it is by no means uncommon for the patient to complain of a loss of power; and the same may be seen in cases of phlegmasia dolens, where a weak state of the limb often remains long after every other symptom of the disease has subsided. So I take it to have been in the case detailed. The child had suffered severely, and this state was followed by one of paralysis. It is scarcely necessary to observe that in the adult it is common to meet with cases of spastic rigidity of the arm, which are often attended with great sensibility of the part,—a state which may be either congenital, or else dependent upon incurable organic disease; and indeed a very analogous state of things may often be observed towards the end of many cases of hydrocephalus. The next case affords an example of paralysis under a somewhat different aspect.

Case II.—A healthy-looking child of fourteen months old, and still at the breast, was brought to St. Thomas' Dispensary in March, 1844. The mother said that the child had lost the

power of moving the left upper extremity, and she suspected the person who had charge of it of having given the arm some hurt. On examination nothing wrong could be detected; the arm could be moved in any direction, and though the child cried, it appeared to me that this was more owing to fright than anything else. Otherwise the arm remained hanging by the side, and though the child was ready to grasp my watch with the right hand, I could not induce it to do so with the left. The child, I have said, appeared healthy; it had its full complement of teeth, had cut them without any unusual pain, and the mother said the bowels were free. Under these circumstances a few alterative powders were directed, as also a bath, which was to be repeated; and when I next saw the child, two days after, all the symptoms of paralysis had disappeared.

Though several other instances of this affection could be brought forward, the two given appear to me quite sufficient to illustrate the particular form of disease now under consideration, and which I may venture to call the temporary paralysis of early life; for I have not yet met any instance where it was permanent, or indeed lasted longer than the ninth day.

The causes of this affection would appear to be usually some irritation in the bowels, or else that arising from teething; for it is certain that between the fifth and the ninth month is the most frequent period to meet with it. It appears to me, too, extremely probable, that it is often caused by the child lying on the limb while in the cradle; and the fact that the paralysis is, frequently at least, observed for the first time on taking the child up, would go some way in bearing out this opinion. It is now well known that this cause is quite sufficient to induce paralysis, and in my former essay two cases were given, where the affection, arising in this way, and in spite of every treatment that was adopted, became permanent.

On the diagnosis of this affection it is unnecessary to dwell; there is scarcely a possibility of mistaking it for any other. I

have scarcely seen any instance of this disease in which some one or other was not blamed for having injured the part, and so caused the paralysis; and, in truth, there is nothing more common than for the medical man to be consulted on this very point, and it is one for which he should be prepared. That an injury might be inflicted, which would give rise to pain, and this, in its turn, to paralysis, is not by any means impossible. I can only say that no instance of the sort has as yet come under my notice. When it is said that the diagnosis is sufficiently plain, it must not be understood that there are no other affections with which this one may be confounded. I have seen instances where it was difficult to distinguish between the form of paralysis I have been speaking of, and commencing disease of the hip-joint. When real disease does exist, however, it will be found usually to have been much slower in its progress; its onset will, as a general rule, have been preceded by marked derangement of the general health, which, together with some enlargement of the glands of the groin, heat about the parts, and pain when pressure is communicated to the head of the bone, suffices to distinguish the paralytic affection from the more serious disease.

The prognosis of this form of paralysis is favourable. No instance has as yet come under my notice, where the duration of the disease exceeded ten days, and in general they got well in about half that time. When the cause of the paralysis, however, has been owing to pressure exercised on the limb, much more caution in giving an opinion will be requisite, for then the affection may be permanent.

Nor is it necessary to dwell long on the treatment. The paralysis appears to me to be more commonly dependent on disordered bowels than any other single cause. It has been already stated, that healthy children are most subject to the affection, and in such confined bowels are very apt to exist. In other instances, however, the discharges, without being confined, are unhealthy in their character, the tongue, too,

being often found coated. We will, of course, be guided in our treatment, as one or the other state predominates, by giving either aperients or alteratives. With these the warm bath appears to be particularly useful, and the more so if pain happens to exist with the paralysis. In other instances, again, but these the rarest, the irritation produced by teething seems to be the cause of the affection, and the gums will then require our attention. Cases occur, too, and I have seen such, where no apparent cause can be made out. In these, I believe, we shall not go astray in putting the child on the use of mild alteratives, of which the grey powder will be found to be one of the best. When three or four days have elapsed from the commencement of the attack, it is always useful to endeavour to make the child exert itself. This may be done by a little coaxing, or by holding up some bright object, or by other ways unnecessary to particularize. I have found that this plan, simple as it may appear, hastens the recovery of the limb. Any other means that may be requisite will come under consideration farther on.

Such is the first form of paralysis to which I would call attention. I have been induced to bring it under notice a second time, because in the able work of Rilliet and Barthez it is observed that my first account of it was not as complete as it deserved to be. Probably what has been now stated may help to fill up the hiatus which exists in the clinical history of this particular affection.

Of the second form of paralysis, which I am about to describe, I have seen but two instances. Possibly some may think that these are not sufficient to constitute a distinct class; but as they presented some points of interest I have thought them worthy of at least a separate notice. The following is a brief account of the two cases:

Case III.—A girl six years of age was brought to me labouring under paralysis. I found that seven months previously she had suffered from a very severe attack of scarlatina, from

which she had made a slow recovery. While she was still convalescent it was observed that she had lost the power of moving; and continuing so for some months without getting better, she was brought to me for advice. She gave me the idea of one not fully recovered from illness: she walked quite lame, and with a sort of shuffling gait; the right leg bending under her at each step, exactly like what is sometimes seen in the advanced, but cured stage of morbus coxæ. The right arm was in a similar condition, and the power of grasping very much less than with the opposite limb; while neither extremity had the firmness of those of the left side, and appeared to me to be colder likewise. The tongue too I thought was somewhat affected, as she did not seem to speak as plain as might be expected, but of this I am not positive. The hearing and sight were both perfect. Her appetite was bad, and there was marked derangement of the digestive organs, which was shown more particularly by a furred tongue. She had no symptoms of fever. She was directed to use the tepid shower-bath, followed by good rubbing, especially of the affected side of the body; and with this some alterative medicine was also ordered. It was, I think, the third time of her coming to me, when, on looking at her, I observed that she presented some symptoms of chorea, but in a very slight degree. There was a very trifling movement of the head, of a spasmodic character; and, in addition, the girl was unable to keep herself quiet for even a very short period. As a whole, however, it was slight, and almost required to be looked for, to ascertain its existence. In connexion with this state, I discovered a well-marked *bruit de soufflet* in the region of the heart. It occupied the first sound, and was very much localised.

After some five or six weeks, during which the treatment was carried out steadily, the paralysis began to improve. The only change made during this time was, that in place of internal medicine, she was ordered to rub in ten grains of mercu-

rial ointment nightly. Under this plan the symptoms slowly, but steadily, improved; the tongue became clean; and at the end of three months she had completely recovered the use of the side. The *bruit*, however, never altered; and, I presume, had its origin at the time she had the scarlatina.

Case IV.(*a*).—A girl, between eight and nine years of age, was brought to St. Thomas' Dispensary, labouring under paralysis of the right side of the body. As in the last case she walked with a considerable limp, and every now and then the ankle was observed to yield inwards, as the weight of the body came to bear on the joint. The hand of the same side she could close with some firmness, but by no means so much so as the left. I could not detect any difference in the temperature, nor in the firmness of the flesh of the two sides of the body. This girl also presented, on close examination, very slight symptoms of chorea, particularly affecting the weak arm, and occasionally the head. The mother stated that the child had been affected in the way described for the two previous months, but she was unable to assign any cause for the attack. On closer examination nothing could be made out that would account for it. The bowels were in a healthy state; the tongue clean, though pale; the appetite moderate, and the pulse quiet. There was no *soufflet* in the region of the heart. As it was possible that the patient might have been affected with worms, she was, in the first instance, ordered a draught of oil and turpentine; this was followed by the alterative plan, as in the last case given, and this again by a course of tonics, consisting of hydriodate of potash and iron. Under this combined plan the patient recovered slowly; so much so, as at the end of about six weeks to be very nearly free from all signs of paralysis.

These two cases I have thought it well to give, because they are the only two I have seen in young persons, in which the disease assumed the form of hemiplegia, very like, indeed,

(*a*) For the opportunity of seeing this case I am indebted to the kindness of my friend Dr. Ferguson, of Gloucester-street.

to what is seen in the adult. Paraplegia is common enough, but this form is, I believe, very rare. It will be kept in mind that I am only speaking of cases where we have no evidence of the existence of organic disease. The union also in these cases of the paralysis with the chorea, though the latter was very slight, appears worth noting, for it tends to show that some sort of connexion exists between them, though at first sight it might appear strange that such a union should exist. The fact, however, really is, that as yet we know not the true physiology of the nervous system, and every one must have seen instances where, at the same time that there was an increased mobility of the nervous system, there was also an entire loss of its motive power. This may be seen in fevers, and there appears no reason why it may not also be met with in chronic disease. The contrary too may exist; that is, an increase of involuntary motive power, with a greatly lessened degree of sensibility(*a*). The two states may also be combined, as in the cases detailed; and in fact the "extremes here meet," as in other instances. The paralysis runs into the state of over-excitement, and the latter, in its turn, often ends in, or is combined with paralysis. The *soufflet* detected in the first case, and which, from its continuance, must be considered as depending on organic disease, is now well known to be a frequent attendant on, if not a direct exciting cause of chorea(*b*).

Before concluding these remarks, I would allude briefly to a form of paralysis which has been already ably treated of, more particularly by Dr. Graves(*c*), but which is also by no means of infrequent occurrence in early life, and therefore belongs to the part of the subject now under consideration. I allude to those forms of the disease which occur subsequent to fevers, no mat-

(*a*) As bearing on this subject I would refer to some valuable lectures, published in the Medical Gazette in 1848, by Dr. Todd of London.

(*b*) My readers are, I am sure, all aware of the highly interesting and important cases of pericarditis complicated with convulsive movements given by Bright, Latham, and others.

(*c*) Clinical Medicine, by Neligan, vol. i.: several of the lectures.

ter what type they may assume; though it is probably most usual to meet with them after gastric or infantile remittent fevers. Such cases are of tolerably frequent occurrence, and may be almost set down as forming a distinct group in themselves. As far as my experience yet goes, the paralysis in these cases is of a much more serious nature than any hitherto spoken of. In all the cases I have seen or known of, months have elapsed before the patient recovered; while in some the paralysis has been permanent. It would appear too that it is the lower extremities alone which almost invariably suffer; sometimes one, but more commonly the two(*a*); and it is where the fever has been of unusual duration that this casualty has been met with. Whether anything of organic disease exists in these cases, must be matter of doubt(*b*). My own impression is, as a general rule, that there is none, or at least none which art and time will not suffice to remove. The first time I met with a case of the sort occurred some years since, and it came upon me somewhat suddenly. The following is a mere outline of the case:

Case V.—A girl, six years old, was attacked with feverish symptoms, during which she presented marked signs of stomach and intestinal derangement. The fever ran on most tediously for more than five weeks, at the end of which time the symptoms abated, and in the course of another week she was so well as to be allowed to leave her bed. Then it was, and only then, discovered, that she had lost the use of her lower limbs. They were flaccid to a degree, and failed her at once on any attempt being made to put them under her; nor indeed could she move them

(*a*) Paralysis of one lower extremity, following an attack of infantile fever, was the cause of the lameness from which the celebrated Sir Walter Scott suffered, and which became most distressing to him towards the close of his life.

(*b*) My friend Dr. Bellingham has published in a late Number of the Medical Press four interesting cases of paralysis in children. In one of these it appears to me that no organic disease existed, though this can be but matter of opinion.

in any posture; for it has been occasionally observed, and Dr. Graves notices the fact, that patients in this state may be able to move a limb, provided they be in the reclining position, but are totally unable to do so if placed upright(*f*). This child, however, could not move, no matter how she was placed. She remained in the state described for seven months, during which period her general health improved a good deal, but the paralysis could scarcely be said to have altered at all. At the end of this time, however, and by treatment to be spoken of again, she gradually recovered the use of the limbs. She is still, after some years, what would be considered a delicate girl.

Another instance, similar to the case just given, has occurred to me, in a girl aged 13, an hospital patient. But here the commencing fever was not so tedious, nor her recovery so slow, as in the case detailed. Both lower limbs were affected; but I do not think it necessary to refer to the case at greater length. It may be recollected, too, that one of the cases given by Dr. Graves occurred in a boy aged 14, who, from eating a quantity of nuts, first suffered from constipation, and was then attacked with tedious enteric fever, on recovering from which it was discovered that he had lost the use of the lower limbs. The sensation in this case was perfect, as it was also in the cases already given, and which came under my own notice. It is also to be observed that, in all the cases I have seen or known of, the paralysis was confined to the limbs, not affecting any of the abdominal or pelvic organs. This is probably an important point, and one on which the diagnosis of cases of this kind might entirely turn.

The cases of paralysis following gastro-enteric fever, which have been as yet alluded to, are comparatively simple. But

(*f*) As no explanation of this fact has been given, I would suggest the following, viz., that the circulation in the spine is different in the two cases; in other words, that there may be congestion when the patient is upright, which may lessen or go away entirely on his assuming the recumbent posture. One fact every person must have noticed, which is, that pain in the back is often relieved by simply making the person lie down.

it occasionally occurs that they may present much more complicated symptoms; nor can I refrain from giving here, at some length, the notes of a case, for which I am indebted to the kindness of Dr. Symes, of Kingstown. The patient himself I am well acquainted with.

Case. VI.—A young gentleman aged 15, very intelligent, became affected, after ten days' indisposition, with feverish symptoms, marked, in a more than common degree, by irritability of the stomach, and pain even when very slight pressure was used. These symptoms began on the 2nd of September, and on the 25th of the same month he had completely lost the use of his legs; the irritability of the stomach, however, though it had at first lessened, again recurred, and he had got into the habit of throwing up everything he swallowed; not all at once, but mouthful by mouthful. Solids were longer retained than fluids, but anything he took was vomited. With these symptoms he complained of some pain in the spine. His spirits were good, and he was able to amuse himself occasionally. So matters went on till the 4th of October, when he was attacked with violent convulsions of the body and arms; but the lower limbs remained perfectly quiet. These attacks seemed to be more of the nature of hysteria than anything else; they were so severe, however, as to require several persons to hold him. When recovering from them he appeared to be quite unconscious of what had passed. They occurred commonly at night, during which time he had usually two, such as described. In this state he continued till the middle of October, when he was sent to Wales for change of air. Any measures hitherto tried to allay the vomiting, and the extreme sensibility which still existed over both the stomach and the spine, had but a temporary effect. Creasote was one of the most useful means tried, but it soon lost its power. After a fortnight's travelling in Wales, he returned much improved in every respect, except in the power of moving his limbs. He now generally, though not always, retained solid food on his stomach, but fluids were still vomited. He was somewhat

irritable, and any annoyance would bring on one of the convulsive attacks; but they were not so severe as at first. He was sent a second time to England, and returned at the end of December, still more improved, being both fatter and stronger; but he could not move in the slightest degee the paralysed limbs. In the beginning of February he was seen by Sir Philip Crampton, who fired him slightly down the spine, and repeated it after a few days. Very shortly after this the patient felt a glow of heat down the thighs and legs, and in a day or two later he discovered, to his delight, that he could stand. He soon regained the power of walking, his general health being gradually restored, with the exception of some slight returns, and these only occasionally, of the convulsive attacks.

This case appears to me one of peculiar interest, for here there was a union of paralysis, and at the same time an over-excited state of the nervous system; and both, to all appearance, at least, taking their origin in an irritable state of the gastric mucous membrane, accompanied by fever. The duration of the paralysis was very much the same in this instance as in the cases which have come under my own notice, that is, between six and eight months; and it is worthy of remark, that the use of the limbs seems to be fairly attributable to the form of counter-irritation which was used. This comparatively sudden recovery, I should state, is not uncommon in the class of cases now under consideration, and it is one for which we should be prepared. I have known it occur in another instance, where the patient was much longer deprived of the use of his limbs, and where very considerable atrophy existed(*a*); and it is one of the reasons which have led me to conclude that in such no organic disease is usually present, even though the paralytic state may have persisted for many months. Did my

(*a*) Hysterical females, it is well known, often present extraordinary phases of nervous disease, in which paralysis of a limb or other part of the body forms a prominent symptom, and where sudden recovery is of by no means an unfrequent occurrence. For proof of this I would refer to the work on Diseases of the Nervous System by Sir B. Brodie.

space allow of it, I might refer to the form of vomiting which occurred in this case, and which, I rather think, is an example of the disease which has been already so well described by Sir H. Marsh, under the title of "Regurgitation of the Food." But I must bring these lengthened remarks to a conclusion.

The foregoing observations and cases have been exclusively confined to some of the forms of paralysis met with in early life. But this has been done more for the sake of convenience than any thing else; for I am satisfied there is much less difference between the paralysis of early and more advanced life, than what might at first sight appear. The study of the disease, in young persons, however, appears to me capable of throwing much light on similar affections, occurring at a different period of life. For what, I would ask, is the conclusion which a consideration of all that has gone before must lead us to? Why, that as paralysis of a very serious character may occur in the young, and without any organic disease, so similar affections may be met with in the adult, and ought to be looked upon as such, and clearly discriminated from those where organic lesion is present. I am sure I have seen in the adult all the forms of paralysis which it has been my wish to describe as occurring in the young; and it appears more than probable that the tendency to connect serious nervous diseases, including paralysis, with actual lesion of the brain or spinal marrow, is even yet too strong; though we have the remarks of Graves, Stanley, Stokes, Hutton, Bright, Latham, and others, to prove the contrary. It is not long since, through the kindness of my friend, Dr. Shannon, I had an opportunity of examining two young epileptic patients, who died from the violence of the fits; and yet I was unable to detect anything in the brain or elsewhere which would account for the disease, or the fatal result, which latter, I need scarcely add, is not of common occurrence.

These remarks, however, would be of little value if they had not some tendency to enlarge our views on the subject of paralysis in general. It has been stated on another occa-

sion, and I would here repeat, that medicine cannot be studied on too wide principles. For every man's experience must daily afford him examples of cases of disease, in which nosology, with all its arrangements, is completely at fault, and where, consequently, we are driven to treat disease on general principles. Thus, to confine myself to one point, it is my firm conviction, that the study of paralytic affections, and their results, in early life, is quite capable of adding to our powers of treating similar affections in the adult. In other words, are we not too ready to give up the treatment of paralysed limbs, and look upon them as beyond the resources of art? We have seen that it is quite possible for young persons to recover from very serious attacks of paralysis; and though it would be unreasonable to look for the same amount of amendment in the adult, there appears to me no good grounds why it should not be attempted. This much I know, that weeks, or months, or years, will not justify us in pronouncing the case hopeless. (It is only of the purely paralytic state of a limb I am now speaking.) For, did space permit, I could detail instances where recovery has taken place after years had elapsed. It will not be supposed, from these remarks, that I possess any means of cure which are not equally known to all. What I wish to convey is this: that the means at our disposal, such as friction, exercise, electricity, counter-irritation, baths, &c., are capable of effecting cures, or at least great amendment, in cases which have been considered as beyond the reach of our art; but that, for this purpose, they must be carried out much longer and more perseveringly than is at present done. The only medicine I would notice, and which I believe is seldom used for this express purpose, is mercury in alterative doses. Its value I learned from the late Mr. Colles' last work; but, as is known, he pushed the mercury to salivation; and I believe more will be gained, in many cases, by what is regarded as the alterative action of the medicine, continued for a long time. Possibly, on some future occasion, an opportunity may offer of bringing this particular part of the subject more especially under notice.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

On Stricture of the Urethra, and Fistula in Perineo. By James Syme, F.R.S.E., &c., &c. Edinburgh, Sutherland and Knox. 1849. 8vo. pp. 72.

Stricture of the Urethra, its Pathology and Treatment; comprising Observations on the Curative Powers of Potassa Fusa in that Disease; with Cases. By Robert Wade, F. R. C. S., &c., &c. Second Edition. London, Churchill. 1849. 8vo. pp. 247.

When a metropolitan surgeon, of such high reputation as Mr. Syme has earned for himself, comes before his professional brethren with a new plan of treatment for a frequent and important disease, his proposal calls for serious consideration; and it is with this feeling that we have taken up Mr. Syme's essay on strictures of the urethra and fistulæ in perineo. In the preface he remarks,

"That the method of treating obstinate strictures of the urethra recommended in the following pages was communicated to the profession, five years ago, through the periodical press, and again, two years ago, in a collection of surgical essays; but, so far as I know, it has not as yet been adopted by others, even in a single instance. Being deeply impressed with the importance of the subject, I feel it my duty to make another attempt, with the view of awakening attention to it, by publishing, in a separate form, full details of the procedure, together with its advantages, positive and comparative; and also further evidence of its efficacy, from cases in public as well as private practice. Having done this, I leave the matter to the profession, trusting that, whatever may be their decision, they will at least give me credit for an earnest desire to render the opportunities committed to me conducive to the improvement of practical surgery."

Mr. Syme commences his observations by remarking, that the occurrence in surgical practice of cases in which strictures of the urethra have existed for the greater part of a lifetime, notwithstanding the efforts to remove them by practitioners of the greatest skill and experience, evidently shows that the means of treatment hitherto employed must either be uncertain in their operation, or only temporary in their beneficial effect; and adds, that his object now is to explain and recommend a method of treatment which has been found an effectual remedy for the disease, even in its most inveterate forms.

In referring to the obstinate cases of permeable stricture, in which his new mode of operation is recommended,—for his observations do not at all apply to what are called, and, as he says, improperly, impermeable strictures,—Mr. Syme says:

"I do not here allude so much to the mere tightness of contraction, and the difficulty consequently experienced in passing a small instrument through the stricture, as to the unyielding disposition manifested by the constricted canal, and its tendency to contract, perhaps even more closely than before, after being partially or completely dilated. One other feature of such obstinate cases, of great importance to notice, is the strong and general sympathy of the system with every change taking place in the local disease; when rigors and febrile attacks, leading to various derangements in different parts of the body, more or less connected with the part locally affected, are apt to result from attempts, even of the most gentle kind, to pass instruments into the bladder."

The following is Mr. Syme's description of his operation:

"If the patient has a great deal of pain, and wishes to escape from the slight degree of it which attends the requisite incision, he should be placed under the influence of chloroform; not partially, so as merely to suspend his consciousness, or impede his recollection of suffering, but completely, so as to prevent any restlessness or unruly struggle, which would tend very seriously to increase the difficulty of the procedure. He should then be brought to the edge of his bed, and have his limbs supported by two assistants, one of them standing on each side. A grooved director, slightly curved, and small enough to pass readily through the stricture, is next introduced, and confided to one of the assistants. The surgeon, sitting, or kneeling on one knee, now makes an incision in the middle line of the perinæum or penis, wherever the stricture is seated. It should be about an inch, or an inch and a half, in length, and extend through the integuments, together with the subjacent textures, exterior to the urethra. The operator then, taking the handle of the director in his left, and the knife (which should be a small, straight bistoury) in his right hand, feels with his fore-finger, guarding the blade, for the di-

rector, and pushes the point into the groove behind, or on the bladder side of the stricture, runs the knife forward so as to divide the whole of the thickened texture at the contracted part of the canal, and withdraws the director. Finally a No. 7 or 8 silver catheter is introduced into the bladder, and retained by a suitable arrangement of tapes, with a plug to prevent trouble from the discharge of urine.

"The patient has merely to remain quietly in bed for forty-eight hours, when the catheter should be withdrawn. The urine sometimes maintains its proper course from the first, but more frequently passes in part through the wound for some hours; no attention or interference is required on this account, but at the end of eight or ten days a moderate-sized bougie should be passed, and repeated once a week or fortnight, for two months."

Mr. Syme recommends the same perineal incision in cases of obstinate stricture, accompanied by fistulæ in perineo, and gives two cases treated in that way.

He details eleven cases of permeable stricture, which he treated by external incision, and says:

"That of all the cases in which I have divided the stricture, only one has been followed by any unpleasant result; on that occasion the patient suffered from a formidable attack of erysipelas, which, commencing in the perinæum, gradually extended over the whole surface of the body, accompanied by constitutional disturbance, so violent as to prove all but fatal, and productive of emaciation, with prostration of strength, to an extreme degree. During this illness, the wound, instead of healing as usual, remained open for several weeks, just as when first inflicted, and it retained its conical form after the process of granulating contraction began, so that when the cicatrization was at length completed, the urethra had a very thin covering at the seat of the aperture, which, therefore, was apt to open from time to time, and discharge a little urine. It may be added, that the combination of circumstances which gave rise to this untoward occurrence was so complicated and unusual that it can hardly by any possibility happen again."

Having reviewed the different methods hitherto proposed for the treatment of stricture of the urethra, Mr. Syme concludes the subject in the following manner:

"From what has been said in the foregoing pages, I trust it will appear established,

"First. That division of a stricture by external incision is sufficient for the complete remedy of the disease in its most inveterate and obstinate form.

"Second. That in cases of less obstinacy, but still requiring the frequent use of bougies, division is preferable to dilatation, as affording relief more speedily, permanently, and safely."

We confess that we were rather startled when we read the foregoing sweeping conclusions, at which Mr. Syme has arrived, in favour of the treatment of passable strictures of the urethra by external incision. That a free division of a cartilaginous stricture will enable the surgeon to pass a large-sized catheter on into the bladder, and thereby afford him an opportunity of finishing the treatment by dilatation, we at once admit; but we are at a loss to understand on what principle the mere longitudinal division of an adventitious texture, which very frequently surrounds the urethral canal, and the nature of which we know from experience to be that of having an extraordinary tendency to contract, can lead to a permanent cure. Mr. Syme says that no attention or interference is required, on account of the urine passing out through the wound for a few hours or days; but at the same time he states that at the end of eight or ten days a moderate-sized instrument should be passed, and repeated at intervals for two months; and, as if not quite satisfied himself as to the permanency of the cure by external incision, he says at p. 43:

"In most cases the cure may then be deemed complete and lasting; but if the tendency to contraction should have been extreme, or if the patient's way of life should be such as to favour the reproduction of the stricture, it will be a prudent precaution to have the bougie passed four or five times in the course of a year, in order to avoid all risk of future trouble."

We must say, after a very careful perusal of Mr. Syme's essay, that we are far from being convinced of the advantages of the treatment by external incision over dilatation in cases of permeable stricture of the urethra; and as the *permanency* of the cure by the perineal incision is the great point on which Mr. Syme lays stress, we should have wished him to have followed out each case, so as to have proved the *remote* results of his operation; for, with the exception of two, all of his cases have been operated on within the year, many but a few months since; and his reports of the great bulk of his cases cease with their dismissal from hospital, or, in private practice, within a few days after the operation was performed. The following is a report of the last of Mr Syme's cases, which will give an idea of the summary manner in which the cases in general are dealt with, and which we conceive has left the boasted advantage of Mr. Syme's treatment, viz., its permanency, unproved.

"Case XI.—A. S. aged 28, a book-binder, was admitted into the Royal Infirmary, on the 29th of July last, for stricture of the ure-

thra at the bulb, complicated by a false passage, as stated in the recommendation of a medical man which he brought with him. The complaint was attributed to a gonorrhœa contracted ten years ago, and had been very troublesome for the last five years, impeding micturition so much, that the urine frequently could not be voided except by drops, and occasionally causing complete retention. It was through ineffectual attempts to afford relief during these attacks, by introducing instruments, that the false passage had been established.

"Having allowed the patient to remain quiet for a few days, I succeeded, on the 7th of August, in passing a bougie through the stricture, and thinking it likely that the treatment by dilatation would prove unsatisfactory, performed division on the 11th. The urine escaped partially by the wound for a few days, and the patient, who had been quite well for a fortnight, was dismissed on the 2nd September, without any trace of the disease or its remedy."

But we are not informed as to the present state of the patient. Every hospital surgeon has sent out cases of stricture treated by dilatation, with as favourable a note as Mr. Syme's of A. S., but that does not prove the *permanency* of the cure ; and although in Mr. Syme's hands the operation by external incision has, he says, but in one case turned out unsuccessful, and which case Mr. Syme has, as we would have expected from his high character, brought forward, still that one case is, in our opinion, quite sufficient to place the profession on its guard, the infliction of a fistula in perineo being a serious addition to a stricture of the urethra. In absence, therefore, of the proof of the permanency of the cure of a permeable stricture of the urethra by external incision, we are not at all surprised, as Mr Syme expresses himself to be, that the profession has not adopted his treatment of stricture by the perineal incision, in preference to that by dilatation.

The great practical feature in Mr. Wade's book consists in his warmly advocating the treatment of stricture of the urethra by potassa fusa. After furnishing his readers with a history of the treatment of strictures of the urethra, Mr. Wade says:

"The severe effects occasionally produced by the nitrate of silver in the hands of Sir Everard Home, who used it very freely and boldly, naturally excited much prejudice against the method he employed; consequently, so formidable a weapon as the armed bougie of Sir Everard is seldom wielded by modern surgeons. The nitrate of silver is occasionally used in small quantities to irritable strictures with very good effects."

And after informing us that Mr. Whately recommended

the employment of potassa fusa in strictures, in preference to nitrate of silver, Mr. Wade says that the practice of Mr. Whately has generally been regarded as ineffectual, from the extremely small quantity of potash which he employed; and tells us that it was the inefficient action of the nitrate of silver that first induced him to try the effects of potassa fusa in impervious stricture, more as a forlorn hope than with any confidence in its success; and he soon found it was necessary to use the potash in more efficient quantities, and more frequently, than recommended by Mr. Whately; and, encouraged by success in two or three cases, he has been induced to persevere in the use of that agent. The cases in which Mr. Wade recommends the use of the potassa fusa are the following:—Firstly, fibro-cartilaginous strictures, impervious to instruments, without the employment of injurious pressure; secondly, hard strictures of long standing, which, although admitting the passage of a small bougie, bleed freely on its introduction; thirdly, irritable strictures; fourthly, spasmodic strictures, not arising from acute inflammation of the urethra; fifthly, strictures which have a marked disposition to contraction. Mr. Wade applies the potassa fusa by inserting a small portion of it into a hole made in the point of a soft bougie, and says that the eighth of a grain is the smallest, and a grain the largest quantity of the potash that he ever uses. Mr. Wade refers to the Westminster General Dispensary, to which institution he has been attached for the greater portion of his professional life, for ample opportunities of witnessing the effects of different modes of treating strictures of the urethra; and the result of his experience, he says, is, that more can be done in bad cases of stricture by the judicious employment of potassa fusa, than by any other means. Any person taking up Home's work would be led to suppose that the treatment of stricture by nitrate of silver was the only safe and permanent one, and as innocent as Mr. Wade says his treatment by potassa fusa is; however, a careful perusal of Sir Everard Home's own cases at once proves that the treatment by nitrate of silver has been often followed by serious results. Notwithstanding, such was the influence of Home's name and writings, that for a time the treatment by nitrate of silver became the fashion; so much so, that the late eminent Professor Colles says in a clinical lecture, the notes of which we have by us, "I recollect when Dublin men, physicians and all, ran mad about strictures; it was just after Home's work came out, and every man thought he had a stricture, and nothing was spoken of at club-houses, &c., but strictures, and 'how is your stricture?' became a complete

watch-word. But some of the most valuable lives were lost by caustic before sufficient experience was obtained, and many died, others got violent rigors, which they were pleased to call intermittents, but which, in fact, were urinary fevers; and after a short time we found to our mortification it was a most dangerous practice. Home's plan did not get into discredit till many of his patients returned to Dublin, and then we found out that they were not *permanently* cured."

We are of opinion that the use of potassa fusa, in sufficient quantity to act on the urethra, is open to all the powerful objections which experience has raised against the treatment by nitrate of silver. If there is danger in applying the nitrate of silver to the sound, instead of the diseased portion of urethra, how much must the danger be increased in applying so diffusible an escharotic as potassa fusa? And although Mr. Wade says that in only one case was this use of the potash followed by an untoward result, viz., by perineal abscess, even if the patient should escape from urinary fever, false passage, profuse hemorrhage, retention of urine, still we hold that, if the deliquescent potash be used in quantity sufficient to destroy an existing stricture, it will produce one of a more formidable character, from the unavoidable loss of substance and the consequent contraction, one bearing, in fact, a considerable analogy to that form met with occasionally by every hospital surgeon at the orifice of the urethra, and which takes place at the former seat of a sloughing chancre, and is the result of the subsequent cicatrization. If, on the other hand, an insufficient quantity be used, as recommended by Whately, and to a certain extent followed up by Mr. Wade, no more advantage is gained by the application than would be obtained by the simple introduction of a bougie, the potash, under such circumstances, exerting no escharotic effect on the adventitious structure.

Surgical Anatomy of the Arteries, and Descriptive Anatomy of the Heart. By the late Valentine Flood, M. D. New Edition; by John Hatch Power, M. D., &c. &c., Surgeon to Jervis-street Hospital. Dublin, Fannin and Co. 1850. 12mo. pp. 189.

Few publications on descriptive anatomy have obtained a higher reputation than Dr. Flood's on the Arteries, and as the first edition has been for some years completely exhausted, Dr. Power states in the Preface that he has been induced to prepare a new edition of the work: it thus, in our opinion,

merits additional commendation, presenting all the old excellencies, with many new and important emendations and additions. Amongst the latter we may refer to the anatomy of the heart, of the arteria innominata, of the subclavian arteries, and the operations performed on these trunks; of the axilla, and axillary artery; the operations on the brachial artery; to the circulation of the blood in the liver and kidneys; of the iliac arteries, and the operations upon these important vessels and their branches; and of the femoral artery, &c.

Physiological and practical observations have been judiciously appended to the details of the descriptive anatomy, which cannot fail to render the subject of greater interest to the student.

The work commences with the descriptive anatomy of the heart, which has been contributed altogether by Dr. Power; and a perusal of this chapter will give the reader a good idea of the clear yet simple style of the author,—a style peculiarly adapted to the anatomical student.

Together with a full description of the arterial system, the work will be found to contain a history of the various operations which have been performed on different portions of it, affording much practical and useful information.

Perhaps we could not present our readers with a better illustration of the practical nature of the book, than by quoting the following passage on the operation of tying the common carotid artery in its inferior stage:

"An incision is to be made through the integuments, along the internal margin of the sterno-mastoid muscle, for the extent of about three inches above the clavicle; in most cases a vein may be observed descending along the anterior margin of the sterno-mastoid muscle, communicating with the facial vein above, and with the thyroid plexus of veins, or subclavian, below: care must be taken not to injure this. A portion of the fascia should next be raised in the forceps, and divided in a horizontal direction; through this opening a director should be introduced, and the fascia slit up on it as far as may be necessary. The lips of the wound are next to be separated by retractors, the sterno-mastoid muscle being drawn outwards, and the sterno-hyoid and sterno-thyroid inwards. The sheath of the vessels will be thus exposed, and on the front of it may be seen the descendens noni nerve, which should be drawn inwards, and the sheath divided in the same cautious way as the fascia. A ligature is now to be passed round the artery, directing the needle from without inwards, in order to avoid the jugular vein, which sometimes suddenly swells out during expiration, and then contracts during inspiration. As the vein fills both at its upper and lower extremity, an assistant should in such case compress it both at the

upper and lower angle of the wound. In very many cases, the vein, so far from giving any trouble, is not even observed during the whole of the operation. In the case operated on by Dr. Browne, of the Navan County Infirmary, 'the internal jugular vein did not appear, nor was it a source of the slightest inconvenience during the operation.' Lastly, Mr. Read, of Dublin, whose experience is very considerable, is reported by Mr. Hargrave to have said that, 'in all the operations he performed, or assisted in, on this vessel, the vein was not found to interfere with the operation, nor was it even seen.' —*Operative Surgery*, p. 68. Care is to be taken to avoid including the pneumogastric nerve, which lies behind and between the vessels, and should be drawn outwards with the vein. The sympathetic and recurrent nerves are behind the sheath, and there is comparatively little danger of including them. In operating on the left side, the proximity of the thoracic duct is to be borne in mind."—pp. 35, 36.

The observation in the foregoing passage, with regard to the internal jugular vein not *always* proving a source of inconvenience to the surgeon, whilst tying the common carotid artery in its inferior stage, accords with our own experience. Lately we were obliged to take up the common carotid artery in the inferior part of its course, and so far were we from experiencing embarrassment from the swelling out of the jugular vein, that we scarcely saw it during the entire operation.

A short history of the treatment of aneurism by compression is appended to the surgical anatomy of the femoral artery; and as this plan of treating that formidable disease must be looked on as one of the greatest triumphs of modern surgery, and as, in this city at least, it has almost superseded the operation of tying the vessel, we think the subject has been happily introduced here.

A careful comparison of this edition of "Flood's Descriptive Anatomy of the Arteries" with the former one, will prove the great amount of additional information contained in the volume before us; and we feel assured that the publication of it will tend to support the far-famed reputation of the Anatomical School of Dublin, the task of bringing out a second edition having fortunately been undertaken by a surgeon and anatomist of acknowledged character. We therefore strongly recommend the work both to the student and the practical surgeon.

Essays on Infant Therapeutics: to which are added Observations on Ergot, and an Account of the Origin of the Use of Mercury in Inflammatory Complaints. By John B. Beck, M. D., &c. New York, 1849. 8vo. pp. 116.

Dr. Beck has been long known in these countries as the co-author of an elaborate and comprehensive Treatise on Medical Jurisprudence. He now appears before us in another character, and sustains it as well as he did the former. The present work, though small, contains much that is really useful and practical. It consists of seven essays, which were originally published in some of the American medical journals, and the favourable reception they met with from the profession induced the author to reprint them in an independent form. The first five essays treat respectively upon the effects of opium, of emetics, of mercury, of blisters, and of blood-letting, on the young subject; and the sixth and seventh are upon the subjects mentioned in the title of the book. Although we do not find in them anything positively new, still they are valuable in other respects. They are evidently the product of no inconsiderable research and reflection, and are no less characterized by systematic arrangement than by clearness of language. The plan pursued by Dr. Beck in the examination of each subject is simple and appropriate. He first describes the different peculiarities in the operation of the remedy on the child as compared with the adult; and having established and illustrated these *seriatim*, he then enumerates the practical conclusions which are thence deducible.

The effects of medicinal agents on the young are so very dissimilar from what they are on the grown-up subject, we are almost inclined to think with our author that a complete treatise on infantile therapeutics has been long needed in our profession. The systems of Materia Medica, valuable and elaborate as they are, and in which we should naturally look for the requisite information, are confessedly deficient on this subject. The consequence is, that the young practitioner who depends upon them finds himself continually embarrassed in the treatment of the diseases of children, and he is obliged, after all, to rely upon the incidental observations gathered from works on general practice, or upon the slow accumulations of his own experience. Even works professedly on the diseases of children do not adequately supply the want. They, indeed, specify doses suitable to the age, and now and then give cautions in relation to the use of certain medicines, but they do not enter

properly into the philosophy of the subject, as it ought to be viewed. It is treated by them more as a matter of enlightened empiricism, than as one founded on sound and rational physiological and pathological principles. These remarks are put forward without implying any depreciation of what has been done in this department by individual authors upon materia medica and upon the diseases of children; but we do not know of any treatise that enlarges upon this subject in that full comprehensive manner which it deserves.

Essay I. is upon the effects of opium on children. Our author forcibly points out the vast amount of mischief that annually occurs from the too general and unguarded use of this drug. Much of this, doubtless, arises from the employment of nostrums, and other forms, in which the quantity of opium present is liable to variation. Laudanum, camphorated tincture of opium, and Dover's powder, are, he thinks, the preparations of most certain strength, and most readily divisible into small doses, and therefore the best suited for young subjects. Even with these, however, an accident may happen. It is very well known that Dover's powder, when kept, as it usually is, in a bottle, requires to be thoroughly shaken occasionally, to prevent the sulphate of potash from accumulating at the bottom, which would consequently leave an undue proportion of the two other lighter ingredients at the top; and further, we have known almost fatal effects from the administration of laudanum which had been kept in an open bottle, where evaporation had taken place to such an extent that each drop was nearly double the ordinary strength of the medicine. After describing the influence which the state of the system has in modifying the effects of opium, he gives an example which we think well to adduce here:

"There is one condition of the young subject particularly in which this remedy is frequently resorted to, in which this is strikingly illustrated. I mean that state of exhaustion which arises from diarrhœa and other bowel complaints. In this state the head is very apt to become affected, and if opium be given with a view of checking the intestinal discharges, not unfrequently insensibility gradually creeps over the little sufferer, and in a short time death is the result; and this, too, even when the quantity used has been apparently adapted with great nicety to the wants of the case."—p. 16.

The tenor of his observations on emetics is to enforce greater caution in the use of antimony than is usually deemed necessary. Inflammatory excitement, he thinks, should always be present to justify its use in the young child; and where the

object is simply to empty the stomach it ought never to be thought of; whilst, if the infant is under twelve months old, it is wholly inadmissible. With regard to the manner in which tartar emetic proves dangerous to infants, Dr. Beck supposes it is probably more by its action as a sedative than as a local irritant.

It has been well remarked of mercury that "it constitutes one of the most powerful but dangerous medicines employed in infantile therapeutics." As the opinion of practitioners is very much divided as to its capability of producing ptyalism, we think it well to subjoin Dr. Beck's remarks on this point. After citing several authorities, he proceeds to say:

"That salivation does not take place so readily in the infant as in the adult, would seem then to be well established. That it never can or does take place, as might be inferred from some of the preceding quotations, is by no means, however, true; and the statement, if implicitly relied on, is calculated to be the cause of much mischief. That very young subjects do sometimes become salivated is unquestionable. One case, and only one, however, has occurred in my experience, in which a child of two years of age was salivated, and that by a very moderate quantity of calomel, viz., five grains, given in three portions, at intervals, within the space of about twelve hours. In about two days after, the gums became inflamed, the tongue swelled, several ulcers appeared in the mouth, and the flow of saliva was free. After continuing about three days in the same state, it gradually yielded and disappeared without any further inconvenience."—p. 41.

Dr. Beck would have rendered a very important service to the cause in which he writes had he been able to suggest some certain guide, analogous to salivation in the adult, whereby to judge of the effect of mercury on the system of the child. He himself, however, greatly laments the want of some such criterion, adding, and we think with much truth, that, in consequence of this, the use of the medicine is unnecessarily protracted in many cases to the great detriment of the little patient. It would seem that in America, as well as in this country, the practice of bleeding largely on ordinary occasions has, of late years, been falling into desuetude; and our author leads us to suppose that the reaction in the public mind against this Sangrado system (the injurious prevalence of which he attributes to the authority and writings of Dr. Rush) is so strong as to greatly circumscribe the utility of the remedy. "When an error is once exposed, we are apt to go immediately to its opposite, inferring that what is the reverse must necessarily be right; and so it has been in regard to blood-letting." He does

not think that the ordinary rule of guidance as to the quantity of blood to be drawn from a child, viz., to tie up the arm on the first indication of syncope, is by any means a sufficiently precise mode of determining the point. He suggests no better, however, and it is usually found to answer very well.

Some high authorities have recommended bleeding *ad deliquium*, in certain complaints of children; but we entirely concur with Dr. Beck, that this, as a general rule, is most objectionable; and that nothing but urgent necessity could justify it. The observations on ergot contain nothing that is new or interesting. Many of its properties and uses, well known to practitioners in this country, are wholly unnoticed. We would respectfully suggest to Dr. Beck, before writing another article on this subject, the propriety of looking over the pages of our Journal, where the writings of Dr. Beatty and Dr. Hardy will inform him upon many points he has omitted.

We now take leave of Dr. Beck, and shall be most happy to find him, at some future time, continuing his "Essays on Infant Therapeutics."

Iodognosie(*a*) *ou Monográphie Chimique, Pharmaceutique, et Médicale des Iodiques.* Per Dorvault.

Iodognosis; or a Chemical, Pharmaceutical, and Medical Monograph on Iodine and its Preparations. By Dorvault.

In some recent numbers of the *Gazette Médicale de Paris*, M. Dorvault, whose original work on pharmacy was noticed in the twenty-sixth volume of our former series, has published an essay on the properties of iodine under the above title. It contains an excellent *resumé* of the present state of knowledge as regards this most valuable medicine, and we purpose to present our readers with a short analytical review of it, commenting freely on his observations as we proceed. In a note to his first paper the author explains why he, a mere pharmacien, should undertake to write a medical paper.

"It may," he says, "be fairly asked, why I, who have not a medical degree, should attempt to write on a purely medical question. Almost at the same period, two learned societies, the Society of Medicine of Lyons, and the Society of Arts of Hainaut, proposed as the subject of a prize a question which combined both medicine and chemistry. It was necessary to accept both divisions of the subject

(*a*) From *iodine*, and *γνῶσις*, knowledge.

or not to compete. I did so, and obtained the prize from both societies. This circumstance has made me a physician in spite of myself."

We thus find M. Dorvault placed somewhat in the posision of Moliere's *Médecin malgré lui*, but we are happy to be able to add, not alone with much honour to himself, but with much advantage to the public and the medical profession. The author commences his essay with the following propositions:

1. *Chemically*, Iodine, from its activity and the character of its affinities, occupies a high position in philosophic chemistry.

2. *Pharmaceutically*, Iodine and its chemical compounds constitute the bases of above ten *magisterial* preparations.

3. *Therapeutically*,—There is as much difference between iodine and the iodide of potassium, as there is between mercury and corrosive sublimate, or between sulphur and the alkaline sulphurets. In medical therapeutics, iodide of potassium equals in importance sulphate of quina. In surgical therapeutics, iodine, when better known and more appreciated, will be of more service than the nitrate of silver is at present.

The chemical and pharmaceutical part of the essay having been previously published in the *Revue Scientifique*, the author, in the *Gazette Médicale*, proceeds at once to its medical history. A product but recently known in chemistry, iodine, has been long known in medicine; the celebrated Arnauld de Villeneuve, who taught alchemy and medicine with such celebrity in the thirteenth century, at Lyons, was acquainted with the powers of burned sponge in the treatment of goitre(*a*); and it is even believed that its properties were known to his predecessors. As oil of salt it was known to the inhabitants of Colombia, who from time immemorial were in the habit of employing for this affection the residua of different salt springs, but especially that of Guaca; and in other parts of America, where this disease prevailed, the stems of a sea-weed, a substance named by the natives *palo coto*, were chewed as a remedy.

In popular medicine the algæ and other thallasiophyllæ were known in different countries, and their use perpetuated by tradition, while the employment of cod-liver oil is of extreme antiquity. Moreover, in saline springs which enjoyed repute in the cure of scrofula, modern research has discovered iodine. Courtais discovered iodine, yet to Coindet (of Geneva) are we indebted for the introduction of this substance into practice, nor was it admitted to a place in our materia medica

(*a*) *Breviarii*, lib. ii. cap. iv., De botio gulæ.

without much opposition. At the present period iodine is chiefly employed in the form of iodides, and deserves to be placed at the head of that class of medicines denominated by the ancients *resolvants*, and must be regarded as the most heroic agent in opposing plastic organization, and the most valuable remedy known for the treatment of bronchocele, scrofulous cachexia, and the worst ravages of constitutional syphilis.

As regards the physiological effects of the iodides, the author first classes all medicines in three principal groups, according to their dynamic powers upon living organization. Considering this action, he regards some as acting sympathetically upon our organs, whose morbid states they modify in virtue of simple transmission by continuity of tissue; such, for example, are emollients: others act on the nervous system, and their immediate action is more obscure and less open to analysis; narcotics belong to this class: while others act by chemically modifying our vitiated fluids; such are the salts of iron. Those belonging to the first class he denominates physiologico-sympathetic medicines; the second physiologico-psychological medicines; and the last, physiologico-chemical medicines. Amongst the latter the author establishes a subdivision called chemico-catalytical, of which iodide of potassium, the type of the iodides, is the most prominent. He proves this proposition by the following argument. If we submit the humoral fluids, (blood, lymph, sperm, milk), or their protein elements (albumen, fibrine, caseine), to the action of a solution of iodide of potassium, we shall find that coagulation is prevented in the former, and that the latter are rendered fluid. How is this result produced? Is it by changing their composition? Is it by taking or yielding some element? Not the latter, certainly, for if we separate the products we shall obtain the entire of the iodide of potassium, with all its chemical properties, unimpaired. It then must act by simple contact. This singular effect has been denominated by chemists catalytic force.

In certain pathological states of the living organization the phenomena are the same. The fluidifying action will be produced, and rendered sensible by a modification of the lymphatic and sanguineous circulation, and the integrity of the modifying agent be recognised; if we take, for example, a humoral fluid, blood from a vein, or if we experiment upon urine. This simple fact proves, that the iodide of potassium should be placed amongst physiologico-chemical medicines, with catalytic action.

Iodine may be detected in the tears, the milk, and in the excretions, as in the sweat and urine. Moreover, it stimulates

generally secretion and exhalation, increases the functions of the mucous follicles of the mouth, of the salivary glands, of the alimentary canal, liver, kidneys, skin, pancreas, &c. But the different animal fluids, when saturated with a salt of iodine, readily get rid of it. To this fact Dr. Kramer bears testimony. Having taken the iodide of potassium for fifty days, six days sufficed for the elimination of the salt. Marchal (de Calvi) assures us that he has found iodine in the urine, at the end of five-and-twenty minutes, or, at most, of an hour, after its administration, the dose given having been about two-thirds of a grain of iodide of potassium. Pure iodine, when introduced into the system, has similar effects; and although acting with strong coagulating power in the first instance, meeting rapidly, in the fluids of the body, with sufficient alkali (potash, soda, or ammonia) to saturate itself, it becomes changed into both an iodide and iodate, unless it be entirely transformed into hydriodic acid in the stomach, in which case there is only formation of an iodide. The vapour of iodine, according to Panizza, is as prompt in action as when the substance is swallowed. Of this he gives the following experiment as proof. A goat was made to respire air charged with the vapour of iodine, by having its head confined in a large box. At the end of half an hour the animal was bled, and to the blood potash was added. It was then carbonized, and the water and vapour evaporated to dryness, when the residuum, on the addition of sulphuric acid, gave out the vapour of iodine.

M. Dorvault next proceeds to speak of the immediate action of the iodides. He thinks that former writers on their curative effects have not properly explained the subject, taking their accidental or consecutive effects for the actual or efficient. Amongst the physiologists, one class believed it to be an excitant, whilst another regarded it as a hyposthenic or contra-stimulant. But it is neither truly stimulant nor sedative; as the stimulation, in place of preceding the amendment of the pathological state, follows it, and is only the consequence of the amelioration of the constitutional powers; and its sedative action only takes place because it combats with success, not the exacerbation of the circulating system, but the disease which caused it. A third class, and to which belong the greatest number of physiological observers, look upon it as an alterative, or that it has the power of changing the state of the solids and fluids, without producing immediate appreciable effects. Our author contends that its effects are appreciable even from the time of taking the first dose, and asks is there the least analogy between the curative posology of alteratives—mercury, for ex-

ample—and that of the iodides, and particularly the iodide of potassium? A fourth opinion was advanced by Dr. Cantù, who attributes its therapeutic properties to its chemical action, namely, possessing the power of depriving organic substances, even whilst living, of their hydrogen; and the proof given by him is, that having entered the system as a simple body or in that of an iodide, it is found in the fluids or solids in the state of hydriodate. This opinion was founded on that of the chemists of his time, who made a distinction between the iodides and hydriodates. Finally, Vogt, in placing the iodides in his third class and first order, or medicines operating specially upon the secretory and exhalant systems, seemed to view it as a sudorific; but here, again, we have the consecutive for the immediate effecs.

The author, having combated in detail the above opinions, propounds his own view, namely, that its mode of action resides in its fluidifying power upon the animal liquids, depriving them of the tendency exhibited, under certain morbid conditions, of allowing their constituent and protein elements to separate and form new products, such as coagula, false membranes, and divers pathological changes.

To remove objections to this exclusive view, M. Dorvault adds that the therapeutic power of the iodides does not wholly reside in this fluidifying property, but that they have a special power inherent in their nature. This seems to us but a begging of the question; and we do not think that on this part of his subject the author has thrown any additional light. He next propounds the questions, Does iodine act only in a state of combination, and particularly in the form of an iodide of potassium? If so, to which, then, of the elements of this salt, is it indebted for its special power?

It is long known that the salts of the same base, whatever may be the acid or the electro-negative element, have in general the same physiological effects, and almost the same intensity. The magnesian salts are always purgative, antimonial salts always emetic, &c. &c. Now, it is rational to infer, that to the base and not to the electro-negative body appertains the dynamic power of the product, unless the electro-negative body be endowed with decided medical powers, as cyanogen in the cyanides, or valerianic acid in the valerianates, in which case it may balance or even overcome the electro-positive body. The question now is, does iodide of potassium, the type of the iodides, act by its base, potassium, or by its radical, iodine? If we were to resolve the question by analogy, we should reply, the former. Chlorine, which is well known to have such a remarkable chemical analogy with iodine,

when combined with potassium or with other metals, loses all its physiological qualities, and the compound only presents the qualities of the metal to which the gas is united. But in the iodides of the metals, and especially in the alkaline and earthy iodides, the peculiar therapeutic powers of the iodine predominate.

In concluding this part of his subject, M. Dorvault sums up the question with the following statement, namely, that the iodide of potassium has the power of dissolving or fluidifying the fibrine of the blood, and of maintaining it liquid, without destroying the globules; whilst the mineral alkalis, the ammoniacal salts, and other substances, dissolve the globules also. M. Poiseuille believes that it is owing to this property that iodine has the power of facilitating the flow of blood in the vessels, whilst other substances that have the power of dissolving the fibrine either do not at all influence the motion of the blood, or retard the circulation.

The therapeutical application of the iodides in diseased states of the system, is next considered; in it is given a *resumé* of the experience of the most celebrated writers on this subject. The first disease spoken of is goitre, as it was the first in which the remedy was used. The author tells us that it does not act uniformly on every species of goitre, and that it possesses more power in some localities than in others; viz., that goitre is more under its control in Switzerland than in Paris. That Coindet in this disease found its external application to be successful, and when administered internally at the same time gave it but in very small quantity. The following are the statistics M. Dorvault has collected. Coindet cured two-thirds of the cases treated; Irminger cured 50 in 70; Boup, 45 in 46; and Manson, 87 in 116.

Next, as regards scrofula, the author first describes the various means of cure and by whom they were introduced into practice; he then tells us that he can give no higher proof of the efficacy of iodine in this disease than by presenting a summary of the observations of Lugol, contained in his third memoir on this subject. The observations are classed under the following heads: 1st, scrofulous tubercle; 2nd, scrofulous ophthalmia and coryza; 3rd, cutaneous scrofula, both in the ulcerative and in the corroding form; 4th, scrofula of the areolar tissue; 5th, scrofula of the bones. Of the first there were four cases, all cured; of the second, two cases, all cured; of the third, four cases, all cured; of the fourth, four cases, three cured and one left hospital before the cure was completed; of the fifth, eleven cases, nine cured and two relieved. We

are not, however, to look upon iodine as an infallible remedy in this disease. It acts with more certainty in some forms and stages than in others. Thus it is not so efficacious in the hereditary as in the acquired form of scrofula; in adenitis, arthritis, and scrofulous osteitis, as in the simple swelling of the glands.

M. Dorvault next passes in review the various articles of the materia medica, which have been used in the treatment of syphilis; informing us that Oppenheim, of Hamburgh, has enumerated no less than 141 simple and more compound substances which had been recommended at different times, as substitutes for mercury, in the treatment of this disease. He regards the iodide of potassium as really deserving the title of an anti-syphilitic remedy, though not always replacing the use of mercury, often coming to our assistance when the action of that metal on the disease becomes diminished, or has altogether ceased. The following is a concise history of the employment of the iodides in the treatment of syphilis. Coindet in his third memoir on iodine, propounds the opinion that iodine will be given with mercury for the cure of syphilis in scrofulous subjects; and Biett, in 1824, bears testimony to the justness of that supposition. But to Brera, of Padua, in 1822, belongs the credit of having used iodine alone as an anti-syphilitic. He and his followers, few in number, employed it only in blennorhagia, chancre, and bubo,—symptoms of the first stages of the disease in which this medicine is possessed of least power. It was not, then, till 1828, that the iodides were applied to the treatment of the tertiary symptoms of syphilis, where their triumph has been even more complete than in scrofula. At this period Lugol published three cases, but did not attribute to iodine the credit that it deserved, believing the cure by it to have been a fortuitous circumstance. It is, however, likely that it was from the publication of these cases that others were led to a trial of its efficacy. What has been related of Lugol applies equally to Martini of Lubeck, who about the same period experimented on its powers in combating chronic syphilitic swelling of the testicles. Lucas Champonnière, in his Medical and Surgical Journal, states in 1834, that the iodides were employed for many years previously by Cullerier in chronic syphilitic affections; and in his work entitled "Researches on Syphilitic Therapeutics," published in 1836, he again insists upon the beneficial results of the employment of this medicine: "There was nothing authentic or generally known," writes Dorvault, "of the employment of the iodides in syphilis until the year 1836, when Wallace of Jervis-street Hos-

pital, Dublin, published his clinical observations in the Lancet. With these lectures the French faculty were well acquainted in 1837, and in that year Ricord experimented on the iodide of iron in constitutional syphilis. But the Irish surgeon so clearly demonstrated in his lectures the happy results acquired from the neutral iodide of potassium, that the astute syphiliographer of l'Hôpital du Midi hastened to use this new agent. The impulse given to the surgeons of other countries was not long in teaching its use and confirming the renown of its anti-syphilitic qualities."

The author considers, first, is iodide of potassium equally applicable to all stages of the disease? And this he examines as it relates to the three stages of syphilis. The remedy was first tried in the primary disease, yet our knowledge has but little advanced as regards it; and it is only within the last two or three years that trials have been accurately made as to its efficiency; according to Ricord it does not seem to have any influence on the primary symptoms; and such, without entering into detail, is the opinion of most modern surgeons. In this, as a general rule, we concur ourselves: but there are exceptions; as where primary symptoms occur in broken-down constitutions, when we believe that much benefit may be derived from its employment, more particularly in the phagedenic or sloughing form of the disease. But let us not be misunderstood; for as both these forms may arise from either excess of inflammatory action or want of power in the system, it is to the latter we refer, in which, in combination with opium, it is sure to prove beneficial.

As to the second question,—Is it efficacious in secondary symptoms?—our author tells us that surgeons seem to be divided in opinion. Some believe that this is the form where mercury is most advantageously employed, yet under certain circumstances iodide of potassium may be used with marked advantage: while others assert, that from a combination of both the happiest results are sure to follow. For our own part, we believe that the squamous form is most quickly cured by mercury, but when the squamous form runs into the ulcerative, then the iodide of potassium is of most benefit; and if it again become freely scaly, mercury may be again resorted to with the most decided advantage. In the other forms of secondary symptoms, we believe the iodide of potassium may be with advantage substituted for mercury. As to the cases in which the mixed method of administering mercury and the iodide of potassium at the same time is found of benefit, we doubt not but the bichloride of mercury would be productive of a like advantage.

In tertiary symptoms, iodide of potassium stands unrivalled, and the more chronic the disease, the greater seems to be its power. In the most intense osteocopic pains it proves an immediate opiate, resolves the most voluminous exostoses, even if of long duration, stops the progress of caries and periostitis, and finally cures them. Quoting Ricord and Payan, he tells us that in this form of constitutional syphilis they look upon it as a specific, and that Chomel is enthusiastic in its praise. M. Dorvault gives numerous cases, which we need not delay upon, to prove the efficacy of the iodide of potassium in tertiary symptoms. He next proceeds to tell us that Ricord has found the most wonderful effects from the iodide of potassium in *syphilitic cancer* of the tongue. We must, however, differ from so high an authority, in the belief that there is such a disease as syphilitic cancer. What is here described is, we believe, nothing more than a tertiary form of ulceration attacking the tongue, and calling it by the name of cancer leads but to error in forming a true pathology of that disease.

The comparative value of the treatment by mercury and the iodides, in the various stages of syphilis, as laid down by the author, may be summed up as follows. Mercury is the proper remedy for the primary and secondary stage, and the iodide of potassium for the third. In doubtful cases, where mercury fails, the iodide of potassium will succeed, and *vice versâ;* that, this reciprocity being fully appreciated by practitioners, the happiest results may be expected; and in those cases where either would suffice, the preference should be given to the iodide of potassium, as being the most expeditious and less likely to produce injurious consequences. M. Dorvault concludes his essay by passing briefly in review the various other diseases in which the preparations of iodine have been employed, but to these we shall not at present advert.

The Use of the Blow-pipe in the qualitative and quantitative Examination of Minerals, Ores, Furnace Products, and other Metallic Combinations. By PROFESSOR PLATTNER, Assay Master at the Royal Freyberg Smelting Works. Edited, with Emendations, by Dr. SHERIDAN MUSPRATT, Professor to the Liverpool College of Chemistry, &c. Second Edition. London, Taylor, Walton, and Maberly. 1849. 8vo. pp. 401.

IT is to be feared that the new aspects which chemistry has assumed within the last few years may have the effect of diminishing the number of the cultivators of this science amongst

the members of the medical profession. With the progress of discovery there has been a formidable increase in the amount of facts to be learned, and much embarrassment created by the never-ending changes of nomenclature. To us who remember the delight with which, in imitation of Wollaston, we enjoyed the practice of tube-chemistry, when, with a spirit-lamp and a small box of tests and apparatus, we experimented on the qualities and chemical properties of articles of the materia medica, or on the products of disease, it appears that the practical cultivation of the science on the small scale is likely to be no longer followed. That chemistry should thus be once more consigned exclusively to those who can devote themselves to it alone, and that it should be only known in theory, and not practically, by medical men, will be detrimental not only to the progress of the most valuable applications of the science, but must tend to diminish the rank and confidence which the members of the medical profession ought to hold in the eyes of the public.

It was, then, with no light expectations that we commenced the perusal of the work before us, as promising practical instructions for the chemical student. It is singular how much the uses of the blow-pipe have been either overlooked or imperfectly appreciated. Although, at first sight, it presents the powers of a blast-furnace, when applied to small quantities, yet even this use of it has only of late years led to anything like a just estimate of the extent and variety of its capabilities. We learn from Dr. Muspratt's introduction, that Bergmann was the first who published on the subject. His treatise, *De Tubo Ferruminatorio*, appeared at Vienna in 1779. Gahn, who acted as Bergmann's assistant, continued to employ the instrument in every kind of chemical and mineralogical inquiry; and attained such skill in its applications, that by it alone he was often enabled to detect the presence of substances which had escaped the most careful analysis conducted in the moist way. Thus, when Ekeberg asked his opinion respecting the oxide of columbium, then recently discovered, and of which he sent him a small specimen, Gahn immediately found that it contained tin, although the proportion of that metal in it does not exceed one per cent. Long before the question was started whether the ashes of vegetables contain copper, Berzelius states that he had often seen him extract, with the blow-pipe, from a quarter of a sheet of burnt paper, distinct particles of metallic copper. Gahn always travelled with his blow-pipe, and his great experience led him to make several improvements in its application. There was another distin-

guished operator on the blow-pipe, the great naturalist Saussure, so justly celebrated for his geognostic researches on the Alps of Switzerland. He, as well as Cronstedt, employed the blow-pipe chiefly in distinguishing minerals. Although he made additions and improvements on this subject, yet he did not form an adequate estimate of its powers, and, consequently, never obtained any results to be compared with those of Gahn.

This work of Plattner, for the first time introduced to the British public by Dr. Muspratt, has a high reputation on the Continent. It has been commended, in the strongest terms, by four of the most eminent chemists of the day, Liebig, Berzelius, Rose, and Kane, and has been translated into French by Dr. Sobrero. The plates, which in the original are at the end of the volume, are, in Dr. Muspratt's translation, printed in the margin, so as to illustrate the text. There are several valuable notes by Dr. Muspratt, and the whole work is in the highest degree creditable to all concerned in its preparation. We can add no further commendation, and can only express our hope that the work may soon be in the possession of many of our professional brethren.

The following extract will prove the practical utility of the work, and is an excellent illustration of the style; it is an account of the behaviour of urinary calculi before the blow-pipe:

"URIC ACID CALCULI.—*Per se*, on charcoal or on platinum foil, they become carbonized, fume, and emit an organic smell; in the exterior flame they gradually diminish in size, and, towards the end of the operation, they burn with increased light. When the blast is discontinued they still continue to glow, and at last leave a very slight trace of white ash, which is strongly alkaline.

"Since other combustible substances may be easily mistaken for uric acid, the operation must be performed in the moist way as follows:—A small quantity of the calculus, say one-tenth of a grain, must be placed on a small strip of glass or platina-foil, moistened with a few drops of nitric acid, and heated over the flame of the spirit-lamp. The uric acid dissolves with effervescence, and the mass must then be carefully dried, so as not to become burned, and then heated for an instant, when it acquires a fine red colour. If the quantity is trifling, the latter often becomes black without acquiring a tinge of red. The experiment must then be repeated, and when the solution in nitric acid is dry it must be laid aside, and allowed to cool perfectly; the glass must then be inverted over a little caustic ammonia, which is then to be heated; as soon as the vapour of the ammonia reaches the dried substance it becomes beautifully red (a method first invented by Professor Jacobson, of Copenhagen, who thus proved the existence of uric acid in animals of the lowest

classes). The same thing may be observed, though the colour is less striking, if the dried substance be softened with diluted ammonia.

"It often happens that calculi contain a mixture of uric acid with earthy phosphates. They then carbonize and consume, leaving a considerable residuum, which is not alkaline or soluble in water. Treated with nitric acid, and afterwards with ammonia, they give the fine red colour characteristic of uric acid. The remaining acid is either phosphate of lime or phosphate of magnesia, or a mixture of the two.

"URATE OF SODA CALCULI, rarely occurring in urinary calculi, are often found in the hard excrescences which form around the joints of gouty patients.

"Alone, on charcoal, they blacken, emit a burned odour, and leave a grey, strongly alkaline substance, which can be fused to a glass with silica. If the calculus contains earthy salts, as is usually the case, the glass becomes white or greyish and opaque.

"URATE OF AMMONIA CALCULI behave before the blow-pipe like uric acid calculi. Treated with a drop of caustic potassa, they give, when slightly warmed, a strong smell of ammonia. Care must be taken not to confound this with the slight ammoniacal odour which almost all organic substances develop when treated with an alkali. These calculi often contain a quantity of urate of soda.

"PHOSPHATE OF LIME CALCULI.—Alone, on charcoal, they blacken, emit the odour of burning organic matter, and finally burn white. They do not fuse. Their behaviour resembles in general that of phosphate of lime.

"They are proved not to consist of silica by swelling up with soda, and not fusing to a glass, as well as by giving a regulus of phosphide of iron, when dissolved in boracic acid and fused with iron.

"AMMONIACAL PHOSPHATE OF MAGNESIA CALCULI.—Heated alone on platinum foil they smell strongly of salts of ammonia, blacken, intumesce, and burn greyish white if the heat be increased. They fuse readily to a greyish white enamel-like bead.

"They give a transparent glass with borax and microcosmic salt, which, with a large quantity of the assay, becomes opaline on cooling.

"With soda they fuse to a white swollen slag, which becomes infusible on the addition of more soda.

"With boracic acid and iron they give readily a regulus of phosphide of iron.

"With nitrate of cobalt they give a dark red glass.

"CALCULI COMPOSED OF THE PHOSPHATES OF LIME AND MAGNESIA (*Fusible Calculi*).—Recognised by the slight ammoniacal odour they emit, arising principally from the destruction of organic matter in the calculus. They fuse far more readily than any others to an enamel-white bead, which does not become red with the oxide of cobalt, but brownish black.

"Calculi composed of Oxalate of Lime (*Mulberry*).—Alone, they smell of urine when first heated. The more strongly crystalline varieties become duller and lighter coloured. After being slightly heated the residuum effervesces with a few drops of nitric acid; and after being strongly heated on charcoal, caustic lime remains: this has an alkaline reaction on reddened litmus paper, and generally crumbles to powder when moistened. This is not the case, however, if the calculus contains at the same time phosphate of lime.

"Calculi containing Silica leave, after ignition, a greyish, infusible, and sometimes slaggy ash, which, when mixed with soda, slowly dissolves to a more or less transparent glass.

"Cystic Oxide Calculi behave before the blow-pipe very much like those of uric acid; they do not fuse, but take fire readily, and burn with a bluish-green flame, emitting a strongly acid smell, peculiar and somewhat resembling that of cyanogen. They leave an ash which is not alkaline, and which fuses in a strong heat to a greyish-white mass.

"They are distinguished from uric acid calculi by the smell which they emit when burning, and by not giving a red colour with nitric acid."

The Anatomy of the external Forms of Man; intended for the Use of Artists, Painters, and Sculptors. By Dr. J. Fau. Edited, with Additions, by Robert Knox, M.D. London, Baillière. 1849. 8vo. pp. 313. With an Atlas of Twenty-eight Plates. 4to.

The most famous school for the instruction of artists and sculptors in Greece was kept by Pamphilus; in the course of study was included anatomy. From this school, among other great artists, came Apelles. We wanted not this fact, however, to prove to us the care with which the unapproachable artists of antiquity studied the structure of the human form; their works are evidence enough. The statues of the Apollo, the Farnese Hercules, the Venus, are not mere copies of individuals, they are personifications of something above the human figure. Grace, strength, and beauty, are realized in these noble productions of genius, by men so imbued with profound knowledge of the human form that they could group together in one faultless proportion many beauties never met combined in any single human being. That their painters were equal to their sculptors, the paintings on the walls of the houses of Pompeii prove. The painting of Jupiter in the house of Ceres, Meleager returned from hunting, the Bacchus, but, above all, the twelve figures of the Hours, are most perfect delineations

of the human figure, full of grace and beauty. We have quite sufficient evidence that the greatest of the Italian artists devoted time and labour to the acquisition of a knowledge of anatomy. In some of the fac-similes of the drawings of Leonardi da Vinci, whose "Last Supper" may be regarded as the most admirable sacred picture ever painted, are numerous examples of anatomical designs of legs, arms, and trunks, exemplifying the play of the muscles. The anatomical arrangements of the muscle in the legs of fowls and horses are even designed to illustrate some of his mechanical theories. In the drawings of Raffaelle, also, are several designs, or rather first thoughts, of sacred pictures, in which the skeleton is placed in the centre of the figure. This is especially remarkable in the figure of the Virgin Mary, who is fainting at the sight of the dead body of her blessed Son. There are several sketches of this figure in different positions, but the skeleton seems in most of them to have been sketched as the foundation of the outline of the form. Michael Angelo's profound knowledge of anatomy, if it sometimes led him to a too prominent delineation of the muscles, also enabled him to portray, with unequalled power, the body in action: witness the extraordinary though scarcely pleasing picture of "Soldiers surprised while Bathing." In the wonderful picture of the "Last Judgment," the varied forms, and actions, and even distortions, of the multitude of figures,—of the blessed, of the damned, of angels and of devils,—could only have been conceived and executed by a master thoroughly conversant with anatomy, not merely of the position but of the action of the muscles, bones, and joints.

The Caracci, in their celebrated school, had, according to Pilkington, "the assistance of a very noted anatomist, Antony de la Tour, who taught the disciples whatever might be necessary to be known relative to the knitting of the bones, and the insertion of the muscles."

Titian is said to have made the drawings from the dissections of Vesalius, which we observe in the anatomical folio of the latter.

Holbein and Albert Durer, who, though inferior to the Italian masters, have yet left imperishable names in a lower style of art, must both have been considerable proficients in anatomy. The skeletons in Holbein's "Dance of Death" are admirably delineated, and Albert Durer's work on the proportions of the human body leaves no doubt of his anatomical knowledge. In the admirable picture by Rembrandt, of "Tulpius lecturing on Anatomy," we may see how accurately that great artist has drawn the foreshortened figure on the table, and the

dissected fore-arm. In criticising this picture, Sir Joshua Reynolds commits a curious mistake. He says, that many have found fault with Rembrandt for the stiff position of the left hand of Tulpius, and the extreme flexion of the fingers. The fact being that Tulpius, with his right hand, is holding up with a forceps the flexor digitorum profundus, the action of which muscle, in flexing the ends of the fingers, he is demonstrating by the position of his left hand. About the time of Sir Joshua, however, very little attention was paid to anatomy, and the consequence was a general feebleness in drawing, from which reproach his own great genius barely emancipated him. Proportionate with the present extraordinary advance in painting and sculpture has been the attention paid to the acquisition of anatomical knowledge. The French have been particularly distinguished by their works on this subject, and none could be better adapted for the purpose of imparting the requisite information to the artist than the work under review. The better to accomplish this plan it is divided into two parts; the first comprises: 1st, general considerations on man, and on the modifications he undergoes under the influence of moral and physical causes; the characters of the different temperaments, and of the races of men; 2nd, a brief sketch of the human organization; 3rd, the description of the skeleton, considered in its different parts, and as a whole; 4th, that of the articulations or joints, and the functions they perform; 5th, animal mechanics; 6th, the description of the contours of the external surface of the integument; the indication of the principal causes of forms; the mode of measuring all the parts of the body, and of determining the proportions.

In the second part are contained: 1st, considerations on the osseous forms; 2nd, the description of the forms and of the changes caused in them by muscular movements, by age, sex, &c.; 3rd, in the concluding chapter, some examples of the anatomy of forms, applied to the study of the antique statues. He has very judiciously avoided a mere dry detail of the composition of the human frame; the generality of art students would otherwise be disgusted in the very beginning. At the same time he has not fallen into mere superficiality, a greater error even than the first, for nothing is so barren as a mere sketch of knowledge; its impression on the memory is so faint, that it rapidly fades away. In his general observations on the structure of man, we find M. Fau falling into a vulgar error, in describing the physical condition of the savage.

"Look," he says, "at this man, whose frame has been freely developed, untrammelled by civilization; look at his erect form gene-

rally elevated, his large chest and slender limbs, robust without being heavy. Tight shoes have not contracted or deformed his feet; Rarely surcharged with fat, he yet seldom shows that diseased meagreness so common in the inhabitants of our cities. It is thus that the artist ought to represent man who has not yet contracted our vices and our infirmities."

With this he contrasts the inhabitant of our large towns, his frame meagre and deformed by tight clothes, without strength or suppleness. Now it must not be forgotten that savage races differ most materially. The North American Indian is the *beau ideal* of a savage. Tall, erect, muscular, courageous, with noble features,—a thoughtless observer might conjecture that he was so, because

"Wild in woods the native savage ran."

But if we turn to the Australian savage, we find him slight, and low in stature, the extremities of the women so small as to approach deformity. Savages of the same race even differ; among the Negro race are some of the finest specimens of the human form, according to Walsh; while, on the other hand, the ordinary deformities of some tribes of that variety of man are sufficiently well known. We may be allowed to point, with some degree of national pride, to the specimens of the civilized man presented by our constabulary and city police. We venture to doubt whether any number of picked savages would come up to them. The same might be said, in M. Fau's own country, of Napoleon's guard. We by no means deny, however, that the physical organization of civilized man is deteriorated by the mode of life: in towns, and particularly manufacturing cities, miserable examples of dwindled men and women do unfortunately abound. It is in cities, however, that as the body contracts the mind expands, and he well observes, that it is there we meet with "those noble heads where thought presides and dominates." The habits and pursuits of the individual do very materially influence the organization; in some trades the arms and trunk are strikingly developed, while in others, as in dancers, the legs are most so. Artists, of course, should bear these facts in mind. Imprisonment and disease will also both deteriorate the colour and form. Temperament causes a well-marked difference in the appearance of different individuals. The author describes five temperaments: the athletic, sanguine, lymphatic, nervous, and bilious. After these he lays before the artist those differences depending on the races of mankind. In this he follows M. Gerdy's classification, who makes out four varieties, the white, yellow, black, and red. In these the

facial angle varies considerably, as does the size of the cranium; the area, for example, of the European cranium, being four times that of the face, whilst in the negro the area of the face has been increased by a fifth.

After these preliminary observations M. Fau proceeds to the anatomy. First, a general summary of the organization, beginning with the skin, the subcutaneous cellular tissue, and the layers of muscles; and, finally, the position of the deeper viscera, which constitute the contents of the great splanchnic cavities. At the first view it might be thought that the latter information would be useless to the mere art student. We, however, quite agree with the author in the propriety of giving a general view of the whole system of organs; it does not prevent the student from paying more attention to those parts, viz., the bones and muscles, most useful to him, but it relieves the mind from the unsatisfied feeling which is experienced as long as any part is left unknown. In the subsequent more particular description of the bones and muscles of the extremities and trunk, and of the articulations, the same good judgment is displayed, of avoiding unnecessarily minute details which would only disgust the artist. The descriptive anatomy is naturally followed by applying it to animal mechanics, as the different motions of the body to preserve its equilibrium, when the line of gravity is altered, not only in ordinary movement, but in pregnant women, or very fat men, who are obliged to walk in a particular manner, very erect, or leaning back, to counterpoise the anterior weight. The different levers are described with reference to the bones, muscles, and articulations. The descriptive anatomy also leads to a knowledge of the different contours of the body, and the parts constituting the various prominences and depressions, whether observed in the front view, or seen in profile: these are considered in detail, and are of the utmost value to the artist. The skin is found to present a variety of tints in different parts of the body:

"White and smooth on the forehead, nose, chin, cheek, &c.; coloured on the cheeks, lips, palms; and generally browned on the abdomen and back part of the thighs, as also on the neck, especially when exposed to atmospheric influences; browner on the outer than on the inner side of the limbs, and more especially on the back of the hands; smooth in certain regions, as on the neck, breast, back, and abdomen, anterior surface of the arm, and inner surface of the lower extremities; somewhat rough, and studded with papillary projections, on the back of the arms, and external side of the thighs and hips. The rugous or rough surfaces, scarcely reflecting

the light, have a flat and more solid tone than the smooth parts, to which a luminous reflection gives a greater brilliancy, and a sort of remarkable transparency, especially in woman."

Could any description be more useful than the above to the painter?

While describing the different prominences formed by muscular development, he cautions the artist against too prominent a display of his anatomical knowledge of this part of the frame. This was more needed some years ago in France than at present. A mere delineation of man correctly anatomical would present an unpleasing and insipid spectacle. Two other things should ever be borne in mind, movement and expression. It would be tiresome to our readers to go through in a cursory way the very important chapters on the motions of the head, and the expression. One axiom on this latter point deserves to be remembered, viz., that "in general, in powerful emotions, the traits of expression concentrate towards the middle of the face; whilst they spread out, removing from this centre, in expressing pleasure and agreeable emotions." We are rather amused with the gusto with which M. Fau dwells on the beauty of the form in woman; it reminds us of Mercutio conjuring Romeo by "Rosaline's high forehead and her scarlet lip, by her fine foot, straight leg, and quivering thigh."

"If the torso of man," he says, "be remarkable for the richness and the energy of its forms, in woman it is equally so for the unsurpassable beauty of its voluptuous contours and graceful inflections. Sometimes a white and diaphanous skin permits the azure net-work of veins to be seen through the surface; sometimes it is tinged with the warmest colouring, betraying the presence of ardent and imperious passions.

"The breadth of the pelvis is remarkable in women, nevertheless its transverse diameter is generally inferior to that of the shoulders which it sometimes equals; the haunches project outwards, but are harmoniously rounded. The contours of the back are of the most admirable purity; the region of the kidneys is elongated, the scapulæ scarcely visible; the loins gradually curved forwards, the haunches prominent and rounded; in short, the posterior surface of the torso in woman, is unquestionably the *chef d'œuvre* of nature." And again: "These two systems, the muscular and osseous, are moreover enveloped in a layer of celluloso-adipose tissue, softening the depressions, and contributing powerfully to give to the body of a fine woman those seductive forms which secure to the weaker sex absolute dominion over the stronger."

We may conclude our notice of this part of the work with

the observation, that the division of the body into so many equal parts which he prefers is that of Jean Cousin, who published a work so long ago as 1685. He distributes the body into eight divisions, viz.:

From the summit of the head to the lower part of the chin,		1
„	inferior part of the chin to the nipple, ...	1
„	nipple to the navel, ...	1
„	navel to the genitals, ...	1
„	genitals to the middle part of the thigh, . . .	1
„	middle of the thigh to the knee, ...	1
„	knee to below the calf, ...	1
„	below the calf to the heel, ...	1

There are numerous subdivisions, all most useful to the artist.

The accompanying portfolio of plates is most beautiful. They are lithographs in the highest style of art, by Lemercier of Paris, after drawings from nature by Leveille, and we are sorry to say that at the price we could produce nothing equal to them in the British Isles. The delicacy and fidelity of the flesh tints is admirable, not less so the colouring of the dissected muscles. Of these coloured plates there are twenty-four, including a most interesting *dissection* of the Laocoon. There are four other uncoloured lithographs of ancient busts and statues, executed in London, of less merit. Taking the work as a whole, we are bound to say it is one of the most valuable and beautiful contributions to art we have ever seen, and one which must command the patronage of anatomists and artists.

Medico-Chirurgical Transactions, published by the Royal Medico-Chirurgical Society of London. Vol. 32. London, Longmans. 1841. 8vo. pp. 192.

That ancient and valuable Society, the Medico-Chirurgical of London, with which some of the most learned names that have adorned medicine and surgery are intimately associated, still continues to publish its Transactions with great regularity. The volume is now published at shorter intervals than formerly, which accounts for its diminished bulk; and though we do not find in its pages, so frequently, as in the earlier volumes, essays from such men as Astley Cooper, Bright, Crampton, Chambers, it yet presents us with many practical contributions of great intrinsic merit, a short account of which, from time to time, cannot fail to prove both interesting and

instructive to our readers; and at present, therefore, we purpose to notice the papers contained in the last volume.

The first essay is by Dr. Basham, on *The Employment of Nitrate of Potash in Acute Rheumatism.* In bringing forward this subject, the author states, that he does so rather in the hope of determining the therapeutic value of this salt, and examining its agency, than with any wish to claim originality. The first principle laid down is, that in inflammatory disorders the blood contains an excess of fibrine with an absolute deficiency of the saline ingredients; the mean results he obtained from several analyses of the blood in acute rheumatism being, of fibrine, 7·163, and of saline matters 8·478 parts in 1000. Dr. Basham's argument then is, that the therapeutic action of nitrate of potash, in acute rheumatism, must be explained by its contributing to restore the balance of the saline ingredients, and to control the tendency to fibrinous exudation. Dr. Brocklesby, who published his observations on the administration of this salt in the treatment of acute rheumatism in 1764, and was, we believe, the first who employed it, gave it in large doses, usually to the extent of ten drachms or more in the twenty-four hours. Macbride, who wrote a few years later, speaks most highly of its effects, and of the necessity of giving it in large doses. In more recent times it has been employed in this disease chiefly by Martin Solon, Gendrin, and Aran; and Dr. Basham states, that he commenced to use it in 1843, before the results of Solon's experience had been published. He administers one, two, or even three ounces of the nitrate, freely diluted, in the twenty-four hours, with a remarkable amount of success, whether considered in relation to the duration of the paroxysm, or the immunity from the more serious concomitants of the disease. But he does not intend that the employment of the nitrate of potash should supersede the use of other remedies when they are indicated; the salt, he thinks, assists in restoring the proportion of the saline constituents, while the general constitutional treatment by calomel, opium, antimony, and colchicum, tends to lessen the excess of fibrine, and thus the rheumatic condition is controlled, and the patient safely guided to convalescence. Dr. Basham also employs the saline treatment of acute rheumatism epidermically, applying it directly to the inflamed parts by means of Markwick's epithem, the surface of which is first moistened freely with water, and powdered nitre then rubbed over the moistened surface until no more will be dissolved. Epithems thus prepared are applied to whatever part of the body is inflamed, and require nothing more than to have the spongy surface remoistened

with water once in about six hours. The author fairly tested the efficacy of this local treatment in several cases, and he states that, in each case, the part to which the salt was applied was relieved within twenty-four hours, the other parts continuing inflamed and painful till they were subjected to a like treatment, notwithstanding they were invested with moist fomentations. The paper is concluded with an abstract of seventy-nine cases, treated on these principles; out of this number there were eighteen cases of cardiac disease, and three deaths; in fifty-six males who recovered, the average duration, from admission to convalescence, was 31·10 days, and in twenty females who recovered, 34·15 days.

On a review of Dr. Basham's observation we must confess that we do not think he has made out a good case for his favourite remedy; he seems to have given mercurials, purgatives, diaphoretics, opiates, and the so-called specific colchicum, as freely as other practitioners; and, notwithstanding his chemical theories, we regard the nitrate of potash, as administered by him, merely as a useful refrigerant diet-drink. Its external application we believe to be useful, but not more so than the popular remedy, common salt, similarly applied.

The second essay is by Dr. Routh, on *The Causes of the Endemic Puerperal Fever of Vienna.* He introduces the subject with an account of the Lying-in Hospital of that capital, and the mode in which clinical instruction is conducted there. Two divisions exist in the hospital; in both, the management of the labour is intrusted to midwifes and students conjointly; but in one, the first division, practical instruction is given in a private course where the operations are performed on the *dead body of some female*; while, in the other, the practical instruction is given, and the operations performed, on the *leather phantom*, and *not* upon the *dead body*. The mortality in the first division from puerperal fever was frightful, and at length became so notorious, that females refused to enter it, and the matter became a subject of government inquiry. Numerous theories were propounded to account for this difference, and various means of prevention tried unavailingly, until at length Dr. Semelweiss, the assistant physician of the first obstetric division of the hospital, was led to infer that the real source of the infection was to be found in the *hands of the medical men in attendance being contaminated with cadaveric poisons;* and the results proved the correctness of this view; for on compelling the students not to handle dead animal matter, and to wash their hands in a solution of chlorine prior to and after every examination made on the living subject, the nnmber of

deaths at once fell to seven per month, the usual average of the second division. In a postscript to the essay, dated May 21, 1849, the following convincing statistics are given: In one division, (the first), in 1846 there were admitted 3354 females, and there died 459 ; in 1847 the admissions were 3375, and the deaths 176 ; and in 1848 the admissions were 3356, and the deaths only 45. From these facts Dr. Routh draws the following practical conclusions:

"In the first place, that—1. The puerperal fever of Vienna may be looked upon as an endemic fever.

"2. That it is produced by the direct application of poisonous cadaveric matters, introduced by the hands of the male obstetricians in attendance.

"3. That the cadaveric matters derived from the bodies of persons dead of typhus, erysipelas, puerperal, or other low fevers, are peculiarly dangerous; but that there is no evidence to show that any ordinary cadaveric matters may not produce it.

"4. That it does not appear to be either contagious or infectious.

"And in the second place, as the precautionary measures adopted by Dr. Semelweiss have produced such satisfactory results, that—

"1. Accoucheurs should as much as possible avoid making autopsies, and all contact with cadaveric matter.

"2. They should never attend any woman in labour in clothes which may possibly have been infected; but, *especially* if compelled to handle cadaveric matters, or other poisonous secretions from living persons, should, prior to any examination made *per vaginam*, not be satisfied with washing their hands most carefully, and subsequently greasing them, but also make use of a solution of chlorine, to disinfect the hand from any poisonous matters with which it may have become contaminated, before they presume to enter the lying-in bedchamber."—p. 38.

The third communication is from Dr. Mackenzie of Glasgow ; in it he adds a fifth case to those previously recorded of the presence of a *Cysticercus cellulosæ in the anterior Chamber of the Eye.* The case is reported with the usual care of this distinguished oculist. The operation he performed for the removal of the hydatid was as follows: The patient lying supine, and her left eye-lid retracted by the fingers of an assistant, he made a puncture with Beer's pyramidal knife, at the temporal edge of the cornea to the extent of $\frac{3}{20}$ of an inch. A little of the aqueous humour escaped as the knife was withdrawn, and the tail-vesicle of the hydatid became flattened, and much expanded between the iris and cornea. He immediately passed Schlagintweit's hook through the wound, seized the body of the hydatid with it, and easily withdrew the animal entire. Next day the patient felt quite well, saw perfectly

with the eye, and left the hospital in a week from the day of operation.

The next essay, by Mr. Rainey, on *The Minute Anatomy of the Lung of the Bird*, is written with the view of confirming by comparative anatomy the difference in structure which exists between the membrane lining the bronchial tubes, and that lining the air-cells of the lungs. That the walls of the air-cells are destitute of a lining of epithelium is still denied by some authors, who maintain that they are lined with ciliated epithelium. Amongst others Mr. Addison describes an epithelium in the form of round nucleated scales as lining them. In the present short paper Mr. Rainey, in opposition to these latter statements, brings forward the additional analogical argument, derived from the structure of the air-cells in birds, and in so doing gives an interesting account of the structure of their lungs.

Mr. Jones next communicates an extraordinary case of *Lesion within the Uterus, and partial Reparation before Birth.* The child was born with an unhealed wound, extending from the third dorsal vertebra across the scapula, along the back part of the humerus, to within an inch of the elbow: it only involved the integuments and was partially healed. It appeared to have been caused by a fall which the mother got about six weeks before her confinement. We agree with Mr. Jones in thinking it worthy of being recorded, from its bearing in a medico-legal point of view; as, had the same accident, occurring to an unmarried female, produced premature labour, and the death of the child followed, the presence of such an injury might lead naturally to the supposition that the child was destroyed by the mother, had we no proof that such an accident might take place in intra-uterine life.

Dr. Burd, of Salop, in *An Appendix to a Case in which an Ovarian Tumour was successfully* removed, published in the thirtieth volume of the Transactions of the Society, reports the subsequent conception and child-bearing of the female, with perfect recovery.

The seventh paper is an account of a *Case of Exfoliation of the Anterior Arch of the Atlas*, by Robert Wade, Surgeon to the Westminster General Dispensary. An illustration of a very rare and interesting fact in surgical pathology is here given: it occurred in an individual aged 35, and was the result of tertiary syphilis, the primary symptoms of which had been treated by mercury so as to produce profuse salivation. Exfo-

liations of the alveolar and palatine processes of the superior maxillary bone, and one of the spongy bones, had taken place three or four years after the primary symptoms. In about twelve years after the occurrence of the chancre for which he had been salivated, he was first seen by the author; he had then a sloughy ulcer occupying the greater part of the pharynx, and extending from the uvula backwards as far as could be seen; pus freely oozed on pressure from the centre of this, and on introducing a probe, a bare and rough bone was felt.

"The man complained of more or less constant pain in the back part of his neck, and he had occasionally attacks of very acute pain in the same part, with a rigid state of its muscles, which appeared to fix his head in a position which could not be altered without great suffering. Pressure over the upper cervical vertebræ could scarcely be borne. In these attacks, the application of leeches, followed by warm fomentations, afforded most relief; and the easiest position was obtained by the patient reclining on his right side, with the head carefully supported by a pillow. About two months after his application at the dispensary, I was hastily summoned to the man, in one of his spasmodic attacks, and found him in a state of great alarm, caused, he informed me, by his having, when raising himself in bed, felt something give way in the back of his neck, "with a loud crack like the report of a pistol;" a like report having been heard also by his wife, who was with him at the time. He became very faint, thinking his neck was broken, and that he was dying. On looking into his mouth, some coagulated blood was seen adhering to the ulcer. Between this time and May 28, 1846, the spasmodic attacks had been less frequent as well as less severe, on which day, when looking into the pharynx, I observed a small portion of projecting bone, and with very little difficulty removed the greater part of the anterior arch of the atlas, with the entire articulating surface, from the odontoid process of the axis."—p. 66.

The man, who was a fireman and waterman, was able to resume his usual occupation in the course of three months, with the power of turning his head round nearly perfect, but of only bending it forward to a very slight degree; the throat remained sore, there being present a strumous-looking ulceration covered with a tenacious yellow secretion, and considerable depression in the situation of the exfoliated bone. The editor of the Transactions adds in a note that an analogous case is narrated by Mr. Keate, in the sixteenth volume of the Medical Gazette. To these we can add another, that in Mr. Colles' work on the venerial, page 138.

Mr. Toynbee's *Pathological Researches into the Diseases of the Ear* constitutes the next communication. It is in continua-

tion of his papers in the twenty-fourth and twenty-sixth volumes of the Transactions; and presents, in a tabular form, the results of his dissections of the ears in 915 individuals: of these 184 were the ears of persons known to be deaf; seventy of persons supposed to be deaf; 358 in the stage of incipient deafness; and 303 ears in a healthy state. The tables are preceded by some short introductory observations.

The ninth paper is a description of a *Case of Apoplexy of the Cerebellum*, by Mr. Dunn. As it does not present any novel features, we shall not delay on it, but proceed to notice the following essay, *Remarks on the Causes and Morbid Anatomy of Mental Diseases*, by John Webster, M.D. In the twenty-sixth and twenty-eighth volumes of the Transactions Dr. Webster had published the results of 108 autopsies of insane patients, and to these he adds, in the present communication, sixty-seven additional dissections. He prefixes to these some concise general remarks respecting the apparent or assigned causes of insanity, derived from a large number of lunatic patients in Bethlem hospital. His first observation confirms the well-established opinion, that lunacy prevails more among females than males; thus, of 1798 curable lunatics received into the institution, during six years ending the 31st of December, 1848, 1094 were females, and 704 males. From the statistics of these cases it is also proved that, of the two sets of causes, moral and physical, which psychologists recognise as producing insanity, the former prevails more among males and the latter among females. This is corroborative of the views put forth by Dr. Churchill, in his communication in our present Number; as regards hereditary predisposition, nearly one-third of the entire number were ascertained to have such tendency, but the females afforded the larger proportion of instances. The following observations on the curability of insanity are interesting:

"Respecting the curability of insanity, I would remark, that, in male lunatics, the mental disease, *cæteris paribus*, proved more curable where the attack was produced by pecuniary embarrassments than it did when originating from any other moral cause; and next where the malady arose from religion. But amongst female lunatics, the cases in which love was the assigned cause occupied the first rank in the ratio of curability; and these were followed by the cases due to religion. Again, with reference to physical causes producing mania, the attack seemed most curable when it arose from intemperance, in male insane patients; but, in females, a more favourable prognosis might be predicted in cases of puerperal insanity than in almost any other variety of mental alienation."—p. 118.

The morbid appearances in the sixty-seven dissections are next detailed at length, but the character of the insanity during life is not given in any instance, which we regard as a great omission, and one which lessens much the pathological value of Dr. Webster's laborious report: the merest outline even of each case would have rendered its study much more useful and interesting, and might serve as a basis for obtaining, ultimately, correct views on one of the most obscure points in pathology, the connexion between the symptoms of insanity and morbid changes in the system. The following is Dr. Webster's summary of the alterations of structure observed within the head in 175 autopsies of lunatics reported by him in his present and previous communications in the Medico-Chirurgical Transactions:

"In 145 cases the pia mater was infiltrated. In 127, there was turgidity of the blood-vessels. In 120, fluid was effused in the ventricles. In 62, the arachnoid coat was thickened and opaque. In 45, the colour of the brain was altered from its natural tint. In 32, bloody points were noticed on the cut surfaces of the medullary substance; and in 32 cases, blood was found effused within the cranium; besides various other morbid alterations of structure already enumerated. From these data it therefore unequivocally appears, that the diseased changes which pathologists may generally expect to find on examining the heads of lunatics, in a great majority of dissections, will be: 1st, infiltration of the pia matter; 2nd, turgidity of the blood-vessels of the brain and membranes; and 3rdly, effusion of fluid in the ventricles."—p. 155.

The next paper is by Dr. Risdon Bennett. It is an account of a *Case of Hemiplegia, associated with great Hypertrophy of the Heart, and terminating by Rupture of the Aorta, producing dissecting Aneurism.* The patient, a man aged 52, died about two months after the paralytic attack, the immediate cause of death, which was sudden, being rupture of the aorta, with effusion of blood between its coats and into the left pleural cavity. On *post mortem* examination two clots of blood were found in the brain, one in the middle of the left corpus striatum, and the other in the centre of the left half of the pons Varolii, both associated with softening of the surrounding brain. The arteries at the base of the brain were loaded with atheromatous deposit. The rupture of the aorta was situated immediately beneath the origin of the subclavian artery; it was three-quarters of an inch in length, and nearly transverse. The whole of the aorta was thickly studded with atheromatous deposit, and it was through a patch of atheroma that the rupture took place. The blood was effused from the point of rupture

downwards, between the coats of the aorta, splitting it up as far as the iliacs, but it nowhere occupied more than three parts of the circumference of the vessel. The heart was much hypertrophied, and coloured drawings of the condition and appearance of the aorta are given.

Mr. Wright next communicates a case of *Popliteal Aneurism in which the Femoral Artery was tied after the Sac had burst.* The operation was successful, and the author states that it was so after the failure of compression to effect a cure. To the latter statement we must demur, for the only plan tried to effect compression was by the application of the pad of an Italian tourniquet; yet, notwithstanding the inefficiency of such an apparatus, it is reported that the tumour seemed to diminish in volume, felt more solid, and lost in part its strong pulsation, after only four days' use of it; thus distinctly proving, that had the improved plan, now so generally adopted, been employed, and for which the profession is, we fear not to make the claim, indebted to the skill and perseverance of Irish surgeons, the danger of a painful operation would, in all human probability, have been avoided. Indeed we were much surprised that the surgeon major and the surgeon of the third battalion of grenadier guards, under whose care the patient was, should not have been acquainted with the clamp apparatus, at that time, March, 1848, in use here, and the advantage of employing two instruments.

The last paper in the volume is an account of the *Discovery of Oxalic Acid in the Blood*, by Dr. A. B. Garrod. It was obtained from blood procured from the vessels of the brain of a man aged 65, who had been afflicted with chronic hiccup and vomiting, and at length died dropsical. It is the first published instance of this acid having been detected in the blood; and Dr. Garrod has, since this case, found it in five other instances. When the fact is more fully investigated it may prove of some pathological value.

Lectures on Electricity and Galvanism, in their Physiological and Therapeutical Relations. By Golding Bird, A.M., M.D., F.R.S. London, 1849. 12mo. pp. 208.

The subject matter of this volume consists, as the preface announces, of a series of lectures, which were delivered before the Royal College of Physicians of London, in the spring of 1847, by Dr. Bird. They were reported soon after in the

pages of the Medical Gazette, and the author now publishes them in a separate form, having first carefully revised the entire, and added many new illustrations.

The preliminary education of most medical men secures to them the possession of a considerable amount of information upon the kindred sciences of electricity and galvanism; but it must be confessed that agents so very important, so ever present, and capable of exercising such powerful influences upon the actions of the human system, in conditions of health and disease, have not received from practical men that amount of careful experimental trial and study to which they seem fairly entitled. Hence we hail with pleasure this effort of a talented hospital physician, who has enjoyed peculiarly advantageous opportunities of observation, to bring prominently before the profession the results of his experience in this most interesting department of physical science.

These subjects, too, have received very considerable attention of late, as well from the public at large as from medical men in particular, chiefly from the impression being very general, that many of the extraordinary and mysterious phases of disease, which are observed in both the animal and vegetable kingdoms, have their origin in, or are mainly owing to, some altered or disturbed state of atmospheric electricity. Our author has been engaged chiefly in endeavours to extend the use of this agent in a therapeutical point of view; but whilst so doing, he has not failed to make such general observations of facts, and such special improvements in apparatus and modes of application, as will be likely to aid very materially in the future study of the phenomena of the science.

After some very judicious introductory remarks, Dr. Bird commences his subject by briefly enumerating the commonly received opinions of the complex nature of the electric fluid, and the usual methods adopted for exhibiting it in action by means of inorganic and metallic substances. He then proceeds to demonstrate its existence in organic matters and in the animal frame, not only in the torpedo and silurus—in which, from its being found in large quantity and a high state of tension, owing to the possession of particular organs, its presence is readily admitted—but in man and other animals as well. Galvani's well-known experiment is detailed, and his theory of free animal electricity, founded upon it, noticed, together with the somewhat different conclusions arrived at by his countryman, Volta, from the same premises. To dwell upon these would be quite unnecessary; but we may mention that, when speaking of free animal electricity, Dr. Bird takes occasion to

do justice to the merits of Professor Aldini of Bologna, the pupil and nephew of Galvani, who, adopting fully the views of his illustrious uncle, came to England, and so early as the year 1803 delivered a course of lectures, and exhibited some extraordinary and striking experiments, in which the electrical phenomena were excited by manipulating with animal matter only. Many of the propositions and conclusions of this talented professor are of great interest, and anticipate most remarkably the late researches of Matteuci.

The existence of electricity in the animal frame being proved, it next becomes necessary to inquire whence it is derived, and for what purpose it exists there?

"Electricity is recognised in two distinct forms in animals: one, in which this agent is in a neutral and static condition, that is, in a state of combination, and therefore of rest, capable of being resolved into its two component elements by various mechanical and chemical processes; and a second, or dynamic condition, electricity in motion, or in the state of current."

The former, Dr. Bird says, we have no means, in the present state of our knowledge, of explaining the origin of, save by referring it to the fiat of Omniscience; the second is evidently not anything superadded to the body, but is merely the electricity normally existing in a state of rest or neutral condition, decomposed by some cause or series of causes, by which its positive and negative elements are separated, their attempts at reunion giving rise to the currents alluded to. Quite sufficient cause to account for these can be found in the many chemical changes which are constantly occurring in the animal body; the union of carbon with oxygen, which takes place so largely, not only in the lungs during the process of respiration, but very extensively also over the entire capillary system,—the oxygenation of hydrogen, phosphorus, and sulphur, elements constituting important and essential ingredients of our food,—are so many sources of free electricity.

With respect to the purpose for which electricity may be supposed to exist in the animal frame, we cannot say that any very new light is thrown upon a subject avowedly obscure.

"Secretion and nervous agency have always been the favourite phenomena which electricity has been called in to explain, and with some considerable appearance of probability. Dr. Wollaston, thirty-six years ago, first suggested, from the resolution of salts into their elements, under the influence of feeble currents, that secretion depended essentially upon the electric state of the secreting glands. He thus regarded the kidneys as constituting the positive, and the liver the negative electrodes of the electric apparatus of the body.

"We must admit, however, that a great hiatus exists in every argument which assumes that nervous force and electricity are identical, from the fact that, delicate as are our tests for this agent, it has never been actually detected traversing the nerves."

Dr. Bird then proceeds to notice the very ingenious theory of muscular contraction, promulgated by Prevost and Dumas, and the remarkable experiment of Doctor Wilson Philip, of dividing the pneumogastric nerves in the neck of a rabbit, and in some degree replacing the *vis nervosa*, and causing the process of digestion to be continued, by the passing of electric currents in the direction of the divided nerves; and after showing where these experiments failed to prove as much as their respective authors anticipated, and that the results in the latter case are chiefly owing to some chemical action which is excited in the stomach, he proceeds:

"There is connected with this hypothesis of Dr. Philip a most interesting and important observation of Professor Matteuci, to whose ingenuity and patience we are so largely indebted. This philosopher introduced a plate of platinum into the stomach of a living rabbit, placed another on the liver, and connected both with a galvanometer; the needles instantly traversed an arc of 20°, proving the existence of a powerful current between the liver and stomach. This, it may be observed, shows the existence of a current, but does not prove whether it is to be regarded as an effect or a cause of the chemical changes alluded to; for it has been already shown, that when an acid and alkaline fluid are separated by permeable structures, they actually develop a current of electricity; and as the stomach contains an acid, and the liver an alkaline secretion, this might afford an explanation of the current observed by Matteuci; and had the experiment ended here, this plausible objection would have been a fatal one. But the nerves and vessels passing into the abdomen were divided above the diaphragm, and in an instant the needles of the galvanometer deviated to 3° instead of 20°; and on cutting off the head of the rabbit by a sudden blow, even this little deviation nearly completely vanished. Nothing could be more conclusive than this experiment, in proving that the electric current was the cause, not the effect, of the chemical metamorphosis of the saline ingesta, whose decomposition furnished acid to the stomach and alkali to the liver."

The subject of the origin of animal heat next occupies the attention of our author, and whilst admitting the correctness of Liebig's theory, and acknowledging its capability of accounting for the production of much of the heat of the body, but not the entire, he throws out the suggestion that electricity may be a very considerable source of supply. This hypothesis is strengthened by the detail of some very ingenious experiments

which bear upon the subject; and the lecturer proceeds to notice the existence of electric currents in many of the tissues of the body, and, without stating that such currents are absolutely identical with *vis nervosa*, assumes that they bear to each other the relations of cause and effect. An illustration of his meaning is derived from the effects of an electric current traversing a helix of wire, and converting a bar of iron contained within it into a powerful magnet; and after a series of deductions founded upon several experiments made with this magnet, he asks:

"May not one of the uses of the electricity so freely developed in the body, especially that existing in the muscles, be to excite in the nervous cords the *vis nervosa*, just as currents, if passing near a bar of iron at right angles to its axis, excite magnetism. May not this *vis nervosa*, or nervous polarity, excite the contraction of a muscle, without actual contact with its fibres (for we know that the fibrillæ of nerves lie upon, but do not communicate with the ultimate fibres of muscles), just as the invisible lines of force emanating from the bars of a magnet act upon the suspended bundles of wire or iron filings? Lastly, may not such nervous force again induce electric currents in any glandular or other organs, just as magnetism in motion will re-excite electricity? Thus accounting for what cannot be questioned, the existence of electric currents in certain organs, exclusively excited by or depending for their existence upon the integrity of the nervous influence of the part."

The author then makes some remarks upon diamagnetic phenomena, and proceeds to examine the direct and indirect influence on organic structures, of electric currents artificially excited. He warns his readers that a successful examination of this question can only be looked for when very weak currents of electricity are employed ; as by using those of high tension, the mechanical violence produced by their traversing organized structures almost completely masks their physiological effects. He proves too that it is not necessary that a current of electricity should traverse the whole extent of a nerve to its distribution in the muscles, in order to produce contractions ; if merely a portion of the trunk of the nerve be included in the current the contractions will occur. This experiment he considers one of much physiological importance, as it would appear to point out a further relation between the *vis nervosa* and electricity.

That the nerves undergo some decided change in their organism, by the passage of electric currents, seems pretty evident; for if a current of electricity be made to traverse the coil of a galvanometer, and then to pass through the prepared leg

of a frog, in such a direction that the positive electricity may enter the limb by the sciatic nerve and leave at the toes, as might be expected, contractions instantly occur, but as instantly cease, although the electricity continues still to traverse the limb, as shown by the needle of the galvanometer. When contact is broken with the battery, contractions again occur, although, as indicated by the galvanometer, the current had ceased to traverse the limb. If, however, the current be allowed to traverse the nerve for twenty minutes or longer, no contraction will be manifested on breaking contact, the change produced in the structures being permanent, and they are left paralysed to the further influence of the agent. This change Dr. Bird supposes to consist in part of some alteration in the normal electricity of the tissues traversed by the current, and in part of some physical change in the ponderable atoms.

The effects too of an electric current upon a nerve, and consequently upon the muscles it supplies, differ remarkably according to the direction which it pursues. This observation is one of the greatest interest and importance in a therapeutical point of view, and its not having been hitherto sufficiently attended to in the employment of electricity as a remedial agent, will explain many of the discrepancies in result reported by observers.

"It must not be forgotten that mere muscular tissue is susceptible to the stimulus of electricity, quite independently of its passage through the nerves supplying the structure. Hence when an electric current is transmitted through a limb transversely to the direction of the nervous supply, contractions will occur from the direct influence of the current on the muscular tissue. It appears, however, that a more energetic current is required to exert this direct influence, than when it is allowed to reach the muscles in the presumed course of the *vis nervosa*, or, in other words, in the direction of the nervous ramification. Muscular contractions are developed in the most perfect manner when the positive current travels the limb in the presumed direction of the *vis nervosa*. . . . . .

"Professor Matteuci has termed the shock or contractions produced by the discharge of an electric jar, or the passage of a voltaic current through the muscular structures, independently of the nerves, the *idiopathic shock;* whilst he has applied the term of *sympathetic shock* to the influence on the muscles conveyed by the current traversing the nerves. Thus, when an electric jar is discharged *down* the arm, both these shocks are produced; whereas, when discharged *up* the arm, that is, in a direction opposed to the direction of the nervous ramifications, the idiopathic shock is alone felt. In the former case the sensation experienced, according to these views, is twice as intense as in the latter. Hence, if with the right hand

a person touches the outside or negative coating of a charged jar, and with the left touches the knob or positive surface, he ought to experience a much more intense sensation in the right arm than in the left; for, in the former, the positive electricity runs down the arm, and produces both the idiopathic and sympathetic shocks, whilst, in the latter, the idiopathic shock is alone experienced."

We are now conducted to the more practical part of the work, that in which Dr. Bird makes us acquainted with some of the results of his experience of the employment of electricity as a therapeutical agent. This experience has been the result of many years' careful clinical observation in the wards of Guy's hospital. The authorities of that institution set apart a room for the special administration of electricity, clinical clerks were appointed to record the cases, and the whole was placed under the direction of Dr. Bird, and remained in his hands during eight years. From the large mass of evidence thus placed at his disposal, he has selected some of the most interesting cases, and by their aid illustrates several points of practical importance; of these we shall notice a few.

From having witnessed the effects of feeble currents of electricity excited by a single pair of plates of silver and zinc, he was led to believe that such currents, if kept up for a long time, —*care being taken that the positive current traversed the limb in the direction of the ramifications of the nerves*,—would be the most effectual way of applying this remedy in certain cases of paralysis, namely, in forms of this disease where, after the removal of the immediate cerebral lesion by treatment, the palsied muscles do not recover their power; and he had sufficient evidence from repeated trials to convince him that such was the fact.

But whilst submitting this idea to the test of experience an effect was produced, and a difficulty arose, which put an end to the hope of being able to keep up the passage of a current, of even low intensity, for a lengthened period: this was the formation of a peculiar slough beneath the zinc plate of the apparatus employed, varying in depth in proportion to the length of the period of its application: this slough becomes detached very soon after the discontinuance of the application of the plates, and always leaves a healthy discharging surface. Dr. Bird takes advantage of a phenomenon so constantly occurring, to recommend this as a desirable means of producing counter-irritation when required. He says:

"We are often anxious to produce a persistent discharge from some part of the body, in cases where an issue or seton, or discharge from the moxa or actual cautery, would be desirable. Now the

knife for the issue, the needle for the seton, and the ignited tinder or red hot iron for the moxa,—all have their terrors for timid patients; and there is often the greatest unwillingness to induce patients to use such means. There are, therefore, considerable advantages in the use of a plan which, while it is perfectly competent to produce a copiously discharging sore, shall at the same time not excite the alarm of the most sensitive patient. Now the effect noticed in the case just related points out such a means. It was long ago observed by Humboldt, and afterwards by Grapengiessiek, that when a simple galvanic arc was applied to a blistered surface, the part opposed to the most oxidizable metal was more irritated than that to which the negative plate was applied. But neither of these philosophers have [has] noticed the effects arising from a continued application of the plates. As I believe this *electric moxa*, as I have termed it, is often of very great value, I may be excused giving more minute directions for forming it. Order two small blisters, the size of a shilling, to be applied to any part of the body, one a few inches below the other; when the cuticle is thus raised by effused serum, snip it, and apply to the one from whence a permanent discharge is required a piece of zinc foil, and to the other a piece of silver; connect them by a copper wire, and cover them with a common water-dressing and oiled silk. If the zinc plate be raised in a few hours, the surface of the skin will look white, as if rubbed over with nitrate of silver. In forty-eight hours a decided eschar will appear, which (still keeping on the plates) will begin to separate at the edges in four or five days. The plates may then be removed, and the surface where the silver was applied will be found to be completely healed. A common poultice may be applied to the part, and a healthy granulating sore, with well-defined edges, freely discharging pus, will be left. During the whole of this process, if the patient complains of pain at all, it will always be referred to the silver plate, where, in fact, the blister is rapidly healing, and generally not the slightest complaint will be made of the zinc plate, where the slough is as rapidly forming.

"I have now repeatedly used this mode of exciting a puriginous sore on different parts of the body, both in hospital and in private practice, and it has never in any instance failed. I strongly recommend it to your notice, where it is important to avoid the use of means more alarming to the patient. I certainly know of no other plan by which an equally effective discharge can be obtained, except by the use of the moxa or actual cautery."

It was found in subsequent trials that in forming a slough, one blister, placed where the slough was to be formed, in general proved sufficient, provided the surface of the skin to which the silver plate was applied was previously bathed with a little salt and water, so as to make it a good conductor.

Dr. Bird accounts for the production of these effects by supposing a decomposition of the saline ingredients of the

fluid effused upon the blistered surface to take place; the sodium of common salt being set free at the silver surface, and by oxidation becoming soda, while the chlorine is evolved at the zinc surface and there forms chloride of zinc, which exercises its usual escharotic action. He also proposes to turn to account the fact of the sore beneath the silver plate healing so rapidly, and suggests the application of an apparatus of the kind described to aid in the healing of indolent ulcers, quoting many cases in proof of the efficacy of such treatment. Mr. Hinton, Dr. Bird's assistant, had also used the apparatus with success for the destruction of small scirrhous masses.

The author proceeds to record various other therapeutic effects of electricity, noticed both in his own and in the practice of others; its power of exciting muscular contractions generally is alluded to, and its special applicability in producing a purgative effect by acting upon the bowels, in inducing uterine contractions so as to arrest flooding, &c., and in exciting the bladder to expel its contents in cases of paralysis, is dwelt upon.

In no other disease has the employment of electricity been so absolutely empirical as in paralytic affections, and in none may we expect more benefit to follow a proper selection of cases for trial, and a scientific application of the remedy: our author remarks, "in none have more triumphant success and more bitter disappointment followed its use."

"Paralysis is so general a term, indicating so vast a variety of pathological conditions, that no opinion whatever can be given of the utility of the agent in question, without being more precise in our definitions. One general remark, however, I may venture to make, that under no *circumstances whatever have I ever seen any of the modifications of electricity of use, in the treatment of paralysis attended with permanent contractions*, a condition so frequently observed in the upper extremities. Indeed, so far from sanctioning the use of electricity in any of its forms in such cases, I feel convinced that it may even do mischief, and have on no account ever ventured to employ it. As a general rule, I would especially guard the practitioner against using this remedy in any form of paralysis, where a source of permanent irritation exists in the brain or spine."

Dr. Bird then gives the results of his trials of this remedy in cases of paralysis from various causes, as from lead, rheumatism, cold, hysteria, anemia, &c. In most of these the amount of success was very considerable, and well warrants his recommendation of this powerful agent. His experience agrees re-

markably with that of Dr. Neligan(*a*), and of others who have used this agent in different forms of paralysis and preceded him in publishing the results, when he concludes that it is more likely to prove efficacious where a single muscle or a class of muscles have become affected from a local cause, than in the treatment of hemiplegia or paraplegia from positive organic lesion of the cerebral or spinal centres. We are warned indeed against its incautious employment in such cases.

There are several other affections in which the therapeutic employment of electro-galvanism is noticed in laudatory terms; for the account of these we must refer to the book itself; of chorea especially, and amenorrhœa, some very interesting cases are recorded, and decidedly beneficial results have been obtained in their treatment. A case is also given in which the electric current was successfully employed to keep the system roused during the persistence of the dangerous effects of an over-dose of laudanum. Speaking of amenorrhœa, Dr. Bird says:

"In electricity we possess the only really direct emmenagogue with which the experience of our profession has furnished us; I do not think I have ever known it fail to excite menstruation where the uterus was capable of performing this function. Disappointment will, however, most certainly result, if we have recourse to electricity merely because a girl does not menstruate; and we must never lose sight of the fact that, after all, the large majority of cases of amenorrhœa depend upon an anemic condition, and the patient does not menstruate simply because she has no blood to spare. Nothing can be more ridiculous than applying electricity, or any other local stimulus, to the uterus, when chlorosis exists; the first great indication will be to restore general health, give iron to make up for the previous deficiency of that element in the blood, and then, and not before, think of stimulating the uterus." ..... "The mode in which electricity has been generally employed has been by transmitting a dozen shocks from an electric jar, holding about a pint, through the pelvis; one director being placed over the lumbo-sacral region, the other just above the pubis. In private practice, in which the employment of the cumbrous electric machine is very inconvenient, I have substituted with advantage the induced currents of the electro-magnetic apparatus, the conductors being placed as before. The alternating current from the common coil machine may be employed in these cases, as the electricity seems to act simply as a local stimulant quite independent of the production of uterine contractions. Dr. Collins of Dublin seems to prefer the electro-magnetic current to the shocks of the ordinary electric jar. I believe it is a matter of complete indifference which we employ."

(*a*) Edinburgh Monthly Journal, April, 1846; see also Mr. Donovan's essays in the third volume of our new series, pp. 102, 291.

Dr. Bird does not notice a mode of application of electricity which we have seen employed with very good effect, in cases of paralysis from local causes, as, for instance, that frequently following dislocation of the humerus, viz., the introduction of several needles (acupuncturation), and the passing of electric currents through them, which may be termed electropuncturation. This is certainly sometimes a severe remedy, but in many cases a highly beneficial one.

We now take leave of this highly useful and practical work, recommending its perusal to our readers, as being likely amply to repay them; it is embellished with many diagrams and woodcuts, and is altogether creditable to its author. We could have wished that, when he came to *print* his lectures, he had taken more notice of the merits of other labourers in the same field, who have earned considerable reputation by original research and valuable suggestions.

Essays on Syphilis. Essay 1. *Syphilitic Sarcocele.* With two coloured Plates. By JOHN HAMILTON, Surgeon to the Richmond Hospital. Dublin, Fannin and Co. 1849. 8vo. pp. 40.

COMMUNICATIONS on special branches of medical science are not without value, proportioned to their practical importance and merit. The above Essay is, therefore, of peculiar interest to the surgeon, as affections of the testicle constitute a class of diseases frequently difficult of discrimination, and particularly so as regards "sarcocele." This, in the ordinary acceptation of the term, a disease chronic and insidious in growth, and extremely varied in character, is, in the vast majority of instances, accompanied by a morbid state of constitution, congenital or acquired, and often not accurately defined. The subject of the present Essay is what our author terms, "syphilitic sarcocele," considered under two varieties, "the simple syphilitic sarcocele," and the "tuberculo-syphilitic sarcocele;" but it appears to us that, for reasons we shall by-and-by mention, a more appropriate term for the latter would be "complicated syphilitic sarcocele."

The local characters of these specific forms of sarcocele, the constitutional symptoms attendant on each, their pathology and their treatment, as described in the text, will be read with much interest. In the references given to the several authors, who have treated on the subject, the names of Benjamin Bell, of Mr. Lawrence, and Professor Syme, have been, we are satisfied, unintentionally omitted.

Bell's description of "the swelling of the testicles, from lues venerea" (the "simple syphilitic sarcocele"), is excellent, and his differential diagnosis not less so. Mr. Lawrence's paper, also, on "fungus of the testicle," which is admitted to be an occasional sequela of the "complicated syphilitic sarcocele," specially deserves notice, as he was the first to establish a mode of treatment based on sound pathological principles. Again, Professor Syme's remarks on the same subject, with a view to further modification of treatment, reflect too much credit on his industrial pathological research not to entitle him to merit a passing eulogy; and we know the writer of the Essay too well to think that he will attribute our notice of the omission to other than proper motives. In claiming for Irish surgery the high position to which it is fully entitled, we will not deny the meed of approbation due to the labour of others.

The "simple syphilitic sarcocele" of our author is identical with the "swelling of the testicles from lues venerea" of Bell, the "venereal inflammation of the testicles" of Sir Astley Cooper, the "purely venereal swelled testicle" of Professor Colles, and the "syphilitic orchitis" of Mr. Curling. The subject, however, is treated more in detail in Mr. Hamilton's Essay. There is a great similarity in the description of the attendant local and constitutional symptoms given by these authors, and that in the text. The fact is, two distinct forms of this disease occur in practice, the acute and the chronic; the acute, so characteristically painful that we are not disposed to discard wholly, as being without foundation, the opinion advanced by Sir Astley Cooper, though hypothetically so, "that when the venereal poison affects the testicles it probably attacks the tendinous structures," &c. We would remark, also, that we have met with this affection of the testicles as an isolated symptom, we should, perhaps, say, as an isolated *local* symptom, as, on accurate investigation, some trace of venereal hectic will be found present, to which, in diagnosis, we ought to attach much importance; much more frequently, however, it is, as our author states, associated with the cutaneous symptoms noted, namely, "vesicular syphilis," or "pustular syphilis," not "papular" (unless "tubercular" is to be classed with the latter;) but its most frequent companion is "squamous syphilis." We do not deny, however, that, under the influence of constitutional syphilis, cutaneous eruptions may be developed, which will assume any one of the elementary forms of inflammation characteristic of diseases of that tissue. We have met with this form of venereal affection of the testicles in some few instances in the child. It was always accompanied by effusion into the tunica vaginalis, of varied amount, always engaged

both testicles to a variable extent, and was always associated with the usual train of symptoms attendant on infantile syphilis.

At present a child, aged six months, is under our treatment, whose mother brought him to us about six weeks back. The countenance of the child, the aphthous ulceration at the angles of the mouth, the condition of the fauces, the voice, the snuffle-breathing, and the ordinary cutaneous complication, together with general emaciation, left no room for hesitation as to the nature of the disease. Here both testicles were engaged. The left was enlarged to about the size of a hen's egg, the right to that of a plover's. There was effusion into the tunica vaginalis of the left. In fact, all the essential local features of "simple syphilitic sarcocele were present. Now, all symptoms have given way to treatment; the skin has acquired a healthy aspect; the child has become plump, and the testicles are nearly of normal size and consistence. In no case could syphilitic cachexia be more fully developed. The symptoms have yielded to small and regularly continued doses of mercury with chalk, the local application of camphorated mercurial ointment, the regular support of the testicles, and the use of the tepid bath, combined with nutritious diet suited to the age of the child.

Many circumstances occur to us, as regards treatment, which we could dwell on, were this a fitting opportunity, and amongst others the great value of support to the special organs engaged, and the necessity for the prolonged and gradually suspended use of the specific remedy.

The "tuberculo-syphilitic sarcocele" is an affection far more serious in its nature than that which we have been speaking of. It is, as our author states, much more frequent in occurrence, and the integrity of the testicles is at stake. Its characteristic features are described by Professor Colles in his usual simple and satisfactory style; and the description by our author of the local and the constitutional symptoms are well worth perusal. Mr. Colles speaks most true to nature in his account of the local characters. "The condition of the testicle is," he says, "very different from that which we may consider a purely venereal swelled testicle, for the swelling in many such cases does not involve in one common mass both the epidydimis and the body of the gland; nor does it, in general, acquire the same magnitude as the purely venereal swelling of the testis. In such cases we not unfrequently find, on a careful examination, one or two points into which the end of the finger appears to sink, as if a fluid or a small cavity existed beneath the skin."

To us, where the body of the testicle is engaged, it feels as if a hole had been punched through the tunica albuginea at

the point at which the morbid action is progressing; but for a full and truthful description of it we must refer to the Essay of Mr. Hamilton.

For this affection we have suggested the term "complicated syphilitic sarcocele," as a more appropriate one than that of the "tuberculo-syphilitic sarcocele." We wish we could exclude the word "syphilitic" altogether, as unquestionably we have met with the disease where no syphilitic taint could be traced, and in more than one case where it never could have existed. The true cause of the disease we believe to be the poisonous effect of mercury, exhibited where the constitution was naturally bad, or this effect engrafted on a constitution naturally good, but shattered by mismanagement, as well attributable to patient as to surgeon. "The disease of the testicle is the mildest of his complaints," says Mr. Colles. It is not an isolated symptom, and the radical cure of these complaints is the problem to be solved. Much might be said on this subject of treatment, and we wish we could speak sanguinely respecting it. We regret to say we have seen too many unfortunate cases fall victims to general anasarca, to ascites, accompanied by diseased liver or spleen, dysentery, and other complications. The question of the exhibition of mercury is a most important one, and the mode of administration equally so. No allusion is made by the author to the iodide of iron, which we have found of invaluable benefit in "venereal cachexia," with which the disease under notice is so often associated.

An excellent description of the pathological changes observable in these affections of the testicle is given by Mr. Hamilton. These are also well described in the catalogue of the anatomical and pathological Museum of the Park-street School of Medicine in this city, which was published in 1843 by our lamented friend Dr. Houston(*a*), and under the class comprising these special diseases, will be found in it the description of preparations illustrative of their varied stages, preparations not to be surpassed in interest and value in any museum extant(*b*).

In conclusion, we beg again to thank our author for his

(*a*) This splendid collection now forms the nucleus of the museum of Queen's College, Belfast.

(*b*) We have in our possession at present two testicles, removed after death from a pensioner who fell a victim to what we would term "mercurial cachexia," unconnected with any traceable syphilitic taint. The body of one was normal; in the epidydimis was a tubercular cavity about the size of a hazle-nut; in the other numerous minute tubercles were found throughout the body at various points of the tendinous septa.

essay,—a valuable and timely contribution to surgical science; and we look forward with pleasure to its being followed by others, as we fully agree in opinion with him, that "an hospital surgeon of moderate observation and diligence cannot be long without discovering, in the mass of diseases submitted to his care, something which really is, or that he believes to be, an addition to the knowledge already existing."

The Physiognomy of Diseases. By GEORGE CORFE, M.D., Resident Medical Officer at the Middlesex Hospital, &c. London, Nisbet and Co. 1849. 4to. pp. 147.

THIS is a work upon which there has been evidently bestowed a considerable amount of time, labour, and industrious observation; but with what practical results, with what benefit to the public, remains to be ascertained. The author observes in his introduction:

"In the course of nearly eighteen years' residence in the Middlesex Hospital, where twelve or thirteen thousand patients are annually relieved, it has often struck me, amidst the vast number of cases of disease by which I am surrounded, that such stores of information as are therein presented to the eyes of students ought not to be allowed, as it were, to run to waste; but that gleanings might be largely collected, in order that the general features of this mass of knowledge might be recorded in a somewhat profitable manner."—p. 1.

A whim, a strange fancy, a highly imaginative disposition, may, amidst so many opportunities as the author enjoyed, find ample scope for gratification; but then comes the question, where is the "quid utile," or what is the "cui bono" of all this patient physiognomical research? For our own part, we candidly confess we cannot tell. Might not so much time, and such extensive observation, have been bestowed to much greater advantage in the elucidation of the much more tangible symptoms of disease, and in the more precise announcement of those plans of treatment which had been adopted for their relief? We confess, that we regard the declared object of the work before us as a step in the wrong direction. This is not the age for speculative theories; the absurd reasonings of the schoolmen have passed away, and we trust for ever, whilst in their stead we rejoice to witness the establishment of doctrines founded on indisputable facts. We live in an age of demonstration; and theories in medicine, no matter how ostentatiously or *religiously* paraded, have no further claim on our consideration than in

so far as they bear the rigid test of experimental investigation. Furthermore we solemnly protest against the attempt to enlist the sympathies and interest of any great and influential body of readers, by an exhibition of religious truths. Pure and undefiled religion is not hostile to any, even the highest scientific attainments to which the human mind can aspire, but we cannot help thinking that religion becomes sometimes wounded "in the house of its friend," by its irrelevant introduction into subjects with which it has no direct connexion. What, we would ask, has the note, so replete with scriptural quotations, which figures in the very first page of the work, to do with the "physiognomy of disease"? or where is the connexion between the subject the author treats of and his confession of faith, set forth in the second page? We cannot avoid the painful conclusion that great religious truths lose their solemnity, by being associated with the disgusting narrative or the low jest. The author's belief in a superintending Providence, and "his workings in nature, providence, and grace," are but ill associated in the same page with a London butler, "overrun with pediculi and pruriginous eruptions;" or with the married sempstress, who laboured under "the most inveterate form of scabies and itch combined, whose employment was to attend daily in one of our largest hotels at the west end, to keep in order the stock of linen;" or with the Irishman, who, after having swallowed down a black draught, said, "Thank you, your honour; that's the first bit of victuals I've had these two days."—p. 2.

The author professes himself a believer in the physiognomical views of Lavater, and endeavours to apply his doctrines to the classification of disease. He observes:

"The study of physiognomy was much attended to amongst the Greeks and ancient philosophers, but was not revived until the middle ages. Baptista Porta, a physiognomist of great eminence, wrote a treatise 'on the physiognomy of plants and of birds.' The 'Magia Physiognomica' of Gaspar Schottus, the work of Boyle, and lastly, the elaborate treatise of that singularly gifted author, Lavater, have reduced the subject to some definite and scientific principles."—p. 4.

Again, speaking of Lavater, he says:

"As to the physician, he remarks, 'the physiognomy of the patient frequently instructs him better than all the verbal information he can receive. It is astonishing how far physicians have carried their sagacity in this respect.'"

The author more openly states that the object he has in view in this publication:

"Is to bring forward the assimilation or likeness, certainly not family likeness, of diseases to each other: for though they are not in any respect akin to each other but in the general name, disease,—as one inhabitant of the earth is no relation to his antipodes, excepting in the general term, man,—yet the portraying of the varied lineaments of disease, which assimilate in a general character, may open the path a little wider to, and thus facilitate, the clinical student in his studies of internal diseases."—p. 6.

Again:

"So close is the knitted texture of head and body, that it is a rare occurrence to be enabled to designate a disease purely cerebral, or wholly thoracic. A man may rupture a cerebral artery from mental or bodily exertion; he may have pneumonia from a sudden chill of his body, and soforth; but as the disease, no matter from what origin, is concentrated in the brain, or in the lungs, and as the chief symptoms seem to converge to *that* part, so we give the name of the disease to the distress in that organ, especially in the terms 'apoplexy with oppressed breathing,' or 'pneumonia with delirium,' &c. &c. This being premised, the classification of the higher diseases, according to their physiognomy in the first glance of the eye, will be readily admitted."—p. 6.

We really wish we could decipher the real import of the foregoing extract, we confess our obtuseness of intellectual comprehension in this respect, and must only hope that our readers may be more favoured, and consequently more fortunate in their mental endowments. Probably the author might be able, according to our "physiognomy in the first glance of the eye," to diagnose whether our dulness of comprehension "were purely cerebral" or not. As he has, however, declared this to be "a rare occurrence," we would fain hope that our professed inability to comprehend fully the enunciation of the author's aim, may not be considered chargeable on our mental imperfections. We shall now present our readers with the author's

"CLASSIFICATION OF DISEASES.

CLASS I.

DIVISION I.

Cerebral Diseases in Insensibility: Countenance lethargic.

From Apoplexy.
,, Ramollissement.
From Otitis, &c.
,, Tumours.
,, Arachnitis.
,, Injuries of the head.

CLASS I.—*continued.*

DIVISION II.

Cerebral Asphyxia in Stupor; Countenance livid.

From Narcotic poisons.
„ Coma.
„ Hepatic disorders.
„ Renal degeneration.
„ Intoxication.
„ Syncope (hemorrhagic).
„ Facial paralysis.

DIVISION III.

Cerebral Sympathies in Irrationality; Countenance distressed.

From Delirium Tremens.
„ „ in Fever.
„ „ Pneumonia.
„ „ Pericarditis.
„ „ Enteritis.
„ „ Hysteria.
„ „ Chorea.
„ „ Mania.
„ „ Epilepsy.
„ Paralysis agitans.
„ „ è veneno.

"CLASS II.

DIVISION I.

Thoracic Derangement; Countenance dusky.

From Pneumonia.
„ Pleuro-pneumonia.
„ Œdema pulmonum.
„ Emphysema pulmonum.
„ Œdema Pleuræ (hydrothorax).
„ Asthma.
„ Bronchitis.
„ Endo- and-Exo-carditis.

DIVISION II.

Thoracic Derangement; Countenance anxious.

From Laryngitis.
From Tracheitis.
„ Pleuritis.
„ Empyema.
„ Spasm of the diaphragm.
„ Pleurodynia.

DIVISION III.

Thoracic Derangement; Countenance of peculiar Hues.

From Cardiac disease (chronic).
„ Hydrops pericardii.
„ Emphysema pulmonum.
„ Œdema (engorgement).
„ Œdema pleuræ (hydrothorax).
„ Bronchitis.
„ Hepato-cardiac dropsy.

"CLASS III.

DIVISION I.

Emaciation of Frame; Countenance of peculiar Hues.

From Malignant disease.
„ Tubercular ditto.
„ Cancer
„ „ of the Stomach.
„ „ „ Uterus.
„ „ „ Rectum.
„ „ „ Mamma.

DIVISION II.

Emaciation of Frame; Countenance of peculiar Hues.

From Dropsy.
„ Renal disease.
„ Hemorrhage ushering in the above disease.
„ Mesenteric disease.
„ Entozoa.

"CLASS IV.

DIVISION I.

Abdominal Seizures; Countenance pinched.

From Colic.
„ Colica pictonum.
„ Gall-stones.
„ Urinary do.
„ Spasm of gall-bladder.
From Gastralgia.
„ Cholera.
„ Constipation.
„ Intus-susception.
„ Hernia.
„ Ascarides.
„ Peritonitis.
„ „ nervous.
„ „ acute.

"CLASS V.

DIVISION I.

Enlargement of Organs, Glands, &c.; Countenance, according to acute or chronic Stage, harassed.

From Goitre.
„ Tonsillitis.
„ Cynanche parotidea.
„ Glossitis.
„ Scrofula.
„ Empyema.

DIVISION II.

Enlargement of Organs, Glands, &c.; Countenance careworn.

From Dropsy.
„ „ general.
From Dropsy, peritoneal.
„ „ ovarian.
„ „ mesenteric.
„ „ hepatic.
„ „ cardiac.
„ „ splenic.
„ Tympanitis.
„ Tumours.
„ „ ovarian.
„ „ uterine.
„ „ cystic.
„ „ hepatic.
„ „ splenic.
„ „ aneurismal.
„ Acute rheumatism.
„ „ synovial.
„ „ fibrous.

"CLASS VI.

DIVISION I.

Vascular Diseases in Excitement; Countenance flushed.

From Erysipelas.
„ Rubeola.
„ Scarlatina.
„ „ notha.
„ Herpes-zostera.
„ Urticaria.
From Phlebitis.
„ Rubeoloid fever.

DIVISION II.

Vascular Diseases in Atony; Countenance languid.

From Purpura.
„ Scurvy.
„ Erythema nodosum, &c."

From the foregoing classification we gather that there are the following peculiar expressions of the countenance in various diseases: the lethargic, livid, distressed, dusky, anxious, countenance of peculiar hues, pinched, harassed, careworn, flushed, and languid. And these peculiarities of the countenance are made to form the basis for a classification of disease! On looking

over the individual affections which constitute the several groups, we find facial paralysis classed with coma, hepatic disorders, renal degeneration, intoxication, &c., and all these are placed under the second division, *Cerebral asphyxia in stupor; countenance livid.* For the sake of placing all these several diseases under one division, that of a *livid countenance*, a complete disturbance has been attempted in the other received nosological arrangements. Facial paralysis is not always necessarily connected with *cerebral asphyxia in stupor*, nor is it necessarily attended with a *livid countenance.* This affection may be of a purely local character, it may commence in the branches of the portio dura, and so produce paralysis of the muscles either of one or both sides of the face. Again, pneumonia is placed under the third division of the first class, and under the first division of the second class; bronchitis is placed under the first division of the second class, and also under the third division of the same class. "Tubercular disease" is set down under the same division with "cancer" and "malignant disease." Entozoa and dropsy are placed under the same division. Cholera, gall-stones, and urinary calculi, are associated together. Many similar instances of incongruous grouping will strike the attention of the reader whilst he runs his eye over the classification we have copied from Dr. Corfe's work. We are astonished beyond measure that the disease which of all others exhibits the most striking, the most characteristic physiognomical features, should have been totally omitted in the author's classification, namely, tetanus: we know of no affection which would have so well suited the author's purpose as this, and yet strange it is that no mention whatever has been made of it in the classification with which Mr. Corfe has furnished us.

The following quotation will assist in conveying an idea as to the manner in which the author treats of the several diseases that furnish his physiognomical classification.

"Arachnitis.—The great difficulty which the most eminent surgeons encounter in the formation of a just diagnosis in injuries of the head, and the obscurity attending those fatal symptoms which ordinarily follow such lesions, are chiefly witnessed in large hospitals. The above disease is rarely met with, as an idiopathic affection, in these institutions, and I shall, therefore, seize the present opportunity of tracing a marked instance of traumatic arachnitis, which ended fatally two days ago, and the *post mortem* examination of which took place yesterday. The case was the following: James Meaders, aged 51, admitted May 8th, under Mr. Shaw, with a slight wound over the left eye-brow, with the frontal bone denuded, and fractured

radius, near its humeral extremity, of the right arm. Two days after his admission he had a sharp attack of erysipelas, extending over the head, face, and neck, which, however, passed away, and he was apparently convalescent from it in ten days. On the expiration of a fortnight from this period, Mr. Shaw observed that he was slightly deaf in the right ear; that there was, moreover, partial hemiplegia on the same side, and that the two halves of the face did not quite correspond in symmetry. As the erysipelas had chiefly occupied the right side of the head and face, it was supposed that this slight distortion did not arise solely from cerebral disease. However, the house surgeon, Mr. Dixon, hastily summoned me to see him on the 8th of June, in consequence of a severe fit in which he was then struggling. The face, owing to the former erysipelatous inflammation, was blackened with turgidity, and presented the aspect of a man who had been strangled or drowned. The countenance was a ghastly figure, both in appearance and in its features. There were hemiplegic twitchings and convulsive throes of the right half of the body. There had been increased deafness and impeded deglutition for two or three days prior to this fit. The tongue was not protruded with ease, and he could not, or would not, answer to our questions so readily or so easily as he had done. These symptoms led me to suppose that either the cerebellum or pons Varolii, or medulla oblongata, was suffering from some injury which it had received in the *contrecoup* to the blow on the forehead. Mr. Shaw did not take this view of the case, but regarded the symptoms as the result of active inflammation, beneath the dura mater, of the wound, and that the impaired functions, as it seemed, of the seventh and ninth pair of nerves, were the effect of the erysipelatous swelling. The immobility of these muscles, he conjectured, resulted from the œdematous stiffening which cellular inflammation had left in its train. The accuracy of this shrewd and, to my mind, doubtful diagnosis, was fully borne out by the *post mortem* examination. The jugular was now opened, but only a few ounces of dark blood flowed; the temporal artery, and a vein in the left arm, were successively tried, but not more than seven ounces of blood could be obtained altogether. The pulse rose to 120, but diminished in power; the respirations became deeper and less oppressed, and the ghastly appearance of the countenance gradually subsided. A turpentine enema was administered, and as he already had taken repeated doses of calomel every four hours, it was deemed unnecessary to alter this part of the treatment. On the following day he was much rallied, but the improvement was of short duration, for, in the course of the same afternoon, he had another and more severe fit, and sunk in a few hours afterwards.

"*Post Mortem Examination eighteen Hours after Death.—Head.*—The frontal bone was slightly blackened; purulent matter oozed out from beneath the scalp around the wound. The calvarium being removed, a gush of lymph and whey-like serum escaped from beneath the dura mater on the *right* side. The whole of this hemisphere was

coated with a thick layer of coagulable lymph, and the portion of dura mater immediately opposite to the wound was studded with spots of purulent matter, and the lymph on the cerebral surface at this point was unusually thick and firm. The substance of the brain was softened also in the anterior lobe of this hemisphere. The arachnoid and the whole cerebral matter on the left side were perfectly healthy. There was no effusion or disease in the pons Varolii or medulla oblongata, only that the lymph on the right side extended as far as the base of the brain.

"The following fatal case of idiopathic arachnitis, which has recently occurred, also may tend to illustrate the difficulties which surround this class of cerebral diseases. The symptoms, it will be observed, were quite of an opposite nature to the last-cited case, and yet the diagnosis was found to be a correct one by the *post mortem examination.* I attribute this circumstance, in a great measure, to the fact that, in all acute diseases springing up in an idiopathic form, especially where those diseases attack organs that are essential to life, the recognition of a malady, both in its rise and progress, can be made through the study of the physiognomy, although the patient may be quite insensible, or at least unable to furnish us with any information about his sufferings."—p. 19.

We feel compelled to withhold our assent from the general statement contained in the last sentence: it is true to a certain extent that the countenance in many diseases gives evidence of the fatal progress of the case, or indicates to the medical attendant the pleasing fact that a decided improvement in the patient's symptoms has taken place. Every observing practitioner must be familiar with those changes in the expression of the countenance, which are so apparent during the progress of a case of common typhus fever. Here, as in many other cases, every one knows the importance and value to be attached to physiognomical expressions; but that, "in all acute diseases springing up in an idiopathic form, the recognition of a malady can be made through the study of the physiognomy," appears too absurd a proposition to admit of sober confutation. We cannot overlook the fact that the opinion of the author may not be unattended with consequences of a peculiarly dangerous tendency. Amongst medical students, or young medical men just entering upon the practice of their profession, we believe the teaching of such a doctrine might have the effect of diverting their minds from the more valuable and certain means of forming a correct diagnosis, and directing them to an illusive phantom, a mere amusing conceit, which, at that most critical moment, when a clear apprehension by the practitioner of the precise nature of the patient's malady makes all the difference betwixt life and death, may lead him wofully astray, and perhaps destroy his patient's life and his own reputation.

In speaking of "narcotic poisons," and of the treatment of patients who may have taken an over-dose of laudanum, the author observes:

"Now it is commonly stated, by toxicological authors, when treating upon the subject of poison by laudanum, that after the stomach has been washed out by the pump, coffee or green tea should be administered. This practice is really quite useless,—nay, I believe it is very often prejudicial. The stomach is only irritated by it, and neither beverage has the effect of keeping the nervous system in a state of insomnia. There is, however, benefit to be derived from constant, persevering, but moderate exercise in the open air; though the patient at the outset may be scarcely able to drag one leg after the other; yet have I seen such an individual led out into the hospital garden, supported by two strong men, and *what with an occasional bastinado over the buttocks, in the form of a long, flat, and thin splint*, pulling the hair, dashing the face with cold water, and then smartly rubbing it dry with a rough towel, and again goading the patient on to walk,—I say, I have witnessed recovery from the very worst forms of narcotism by laudanum under such rough and apparently *unfeeling treatment*, whilst tea, coffee, and such like fluids, have been rejected as fast as they were swallowed."—p. 21.

We do not coincide with Dr. Corfe in his objection to tea and coffee on the ground of these fluids producing *irritation* of the stomach; we think the fact affords an argument rather *for* than *against* their exhibition. We do not object to some of the other *irritating* methods employed by the author; but we were of opinion that the *bastinado* was a form of punishment applied more particularly to the soles of the feet, and not to the buttocks, as the author recommends; if, however, he possesses a peculiar predilection for the latter quarters, we have no serious objections: it is all a matter of taste. We hope, however, for the sake of decency, and the honour of our profession, that due care was taken that none but strictly medical eyes should be permitted to witness this interesting procession through the hospital garden. It appears, after all, that additional hands are considered necessary for the purpose of propulsion; the author continues:

"If a third person does not follow in the rear, whilst the patient is walking, *and lay on pretty smartly over his glutei*, from time to time, as he flags and drags along, he will not be kept sufficiently roused to walk at all; and, when once he gets off his legs, you have an extraordinary difficulty to get him up fairly in walking order again."—p. 22.

It might be interesting to witness the *physiognomical alter-*

ations which, in all probability, take place in the patient's countenance during this "apparently unfeeling treatment."

In the second division of the third class the author treats of renal disease; it is placed in the division and class characterized by "*emaciation of frame, and countenance of peculiar hues.*" The author takes occasion to introduce here his views relative to the minute structure of the kidney, which he states were originally published by him in a work, under the title of "A Popular Treatise on the Kidney, &c.," in the year 1839. He asserts that he has demonstrated the existence of fat, or oil, in the interior of the kidney, and affirms, that this material may be found contained in a series of tubes, called by him "feathery oil-tubes;" he asserts also, "that these oil-tubes coalesce with, and drain their contents into, the urinary ducts." And by this he endeavours to establish his claim to priority of discovery as regards the true pathology of Bright's disease!

We will not trespass longer on our readers' time; the extracts we have quoted convey, we think, a tolerably correct idea as to the nature of the work, and the object which the writer professes to have in view. We look upon the volume as a curiosity in medical literature, and as such some of our readers may wish to peruse its contents, but we cannot recommend it on any other account.

Traité d'Anatomie Pathologique Générale. Par J. Cruveilhier, Professeur d'Anatomie Pathologique à la Faculté de Médecine de Paris. Tome Premier. Paris, J. B. Bailliere. 1849. 8vo. pp. 743.

In the high rank of importance bestowed on pathological research, will, perhaps, be found the most marked characteristic of medical science in the present day; and to the labourers in this department we undoubtedly owe much of the progress, and many of the most important additions made to medical knowledge within the first half of the present century.

From humble beginnings, and the unpretending labours of the scalpel, pathology has gradually developed itself; at one time receiving support and elucidation from the collateral departments of medical science; at another, shedding new light on obscure questions of physiology, or laying the foundation of the more practically useful, and not less interesting, science of diagnosis; and thus ever adding to and extending the sphere

of its operations, it has now become the centre to which the highest investigations of the physiologist, the chemist, and the microscopist, tend, embracing all, connecting all, elucidating all: and when we consider the relation existing between pathological principles and questions of hygiene, we cannot, we think, doubt of the propriety of assigning to pathological investigation a position of paramount importance. Usually regarded as a special department, we find that pathology is itself capable of subdivision, and that it admits of, and has been subjected to, several methods of investigation, to such a degree, indeed, that distinct and separate *specialisms* have been created, and that, amongst several observers, physiological, chemical, and microscopical pathology, have each had their particular supporters. As might have been anticipated from this division of labour, the amount of important observations has been greatly multiplied, while the appreciation of the general bearing and connexion of all is confined to a few, who combine in themselves the several principles of research, and are familiar with their application. To the French and German schools belongs the honour of having first appreciated the importance of pathology, and to them, too, are we indebted for the most complete and successful investigations; they it was who marked successive epochs in the history of pathological research, by giving to it new impulses when periods of inaction and stagnation ensued on the completion of a series of researches, or the apparent exhaustion of each method of discovery. The English and Irish schools, if not always originative, have ever followed honourably and successfully in the path of scientific research, and in many instances disputed the palm in a noble spirit of emulation with their foreign antagonists. Pathology has had its cultivators both in Ireland and England, though their labours have not been so extensive, nor their attention so well directed to several of the most important of its subdivisions as on the Continent. In relation to the Irish school of medicine, in which we profess ourselves both more interested and better informed, the foundation of the Dublin Pathological Society marked an era, and gave promise, which, we are proud to say, has not been disappointed, of important results. With the success which has attended the labours of this Society, and the additions it has made to our knowledge on many subjects, we presume every well-informed Irish physician is acquainted; while the testimony borne to their value in the writings which have emanated from the English, French, and German schools, amply proves that the labours of Irish pathologists have

been duly appreciated(*a*). In every department of pathology, save one, we can point to Irish names; for while the proceedings of the Pathological Society and the pages of our Journal record multiplied clinical observations, their connexion with special lesions, and the characters of these lesions as displayed by the scalpel, and numerous physiological and chemico-pathological investigations successfully undertaken, the microscope, one of the most valuable means we possess for the investigation of diseased structures, has been wholly neglected; we cannot therefore point to a single observation of the microscopical characters of normal or abnormal structure emanating from the Irish school of medicine. We believe that we have discovered the causes which have led to our backwardness in this interesting branch of science; but as they are local, and we hope, but temporary, their exposition would hardly be in place at present. Suffice it to say, that we anticipate a new impulse to medical observation in Ireland, and hope ere long that the department of microscopical research will number amongst Irishmen many devoted followers, and that this, as well as other branches of science, will find its representatives and cultivators amongst us. We refer with pleasure to the recent appointment of a microscopical committee in the Dublin Pathological Society, a fact which sufficiently indicates that we are fully sensible of our deficiencies in this department, and determined to supply them. And now that we anticipate a new impulse to pathological research in Ireland, we may be allowed a few remarks, dictated by an anxious desire to guide and direct into the only true path of investigation those who may be destined to enter the arena. The labours of Irish pathologists have been hitherto, with a few exceptions, desultory, and have resulted more from accidental circumstances than from the pursuit of special systems of observation. We have not had specially educated pathologists, and consequently we have not had special systems or treatises on pathology, nor, indeed, on any of its subdivisions; and in the Irish school of medicine there does not exist a single chair or lecturership of pathology. This, the most unworked portion of the entire field of medical science, has yet found no special labourers here; and yet, from the overcrowded departments of medicine and surgery many a student might be spared, whose energies, directed to a sphere of less closely contested action, would bring him a rich

(*a*) Pathological Societies are now also in full operation in two of our principal provincial cities, Cork and Belfast; the proceedings of both of which we purpose publishing from time to time in our Journal.

reward of early honours, and make some additions to this neglected department of Irish science(*a*). Great progress in pathological investigation we cannot otherwise anticipate, and surely the example of a Vogel and a Cruveilhier cannot be without influence; who, if their labours have been untiring, their life a devotion, have undoubtedly met, in the possession of a world-wide fame, a commensurate reward.

To the indefatigable zeal and industry of Cruveilhier, medical literature is indebted for the celebrated *Anatomie Pathologique du Corps Humain*, which has so long been the text book, and standard of reference to the pathologist, and whose accurate delineations of disease have but received additional confirmation from all subsequent observations. This great work, comprising the details of special forms of disease, as manifested in the several organs, is now appropriately succeeded by the *Traité d'Anatomie Pathologique Générale*, which embraces the more general consideration of pathological principles, the classification and arrangement of all the observations hitherto made, and the deduction of laws from them, as far as is warranted by a just system of generalization. With a true appreciation of the extensive nature of the subject, pathology is thus defined in the "Considérations Générales" which form the introductory chapter:

"Considered in the most general point of view, pathological anatomy is that branch of medical science which has for its object the study and determination of all the material lesions of which organized beings are susceptible. Pathological anatomy is the science of *morbid organization*, as physiological anatomy is the science of normal organization. And as living beings are divided into two great classes, vegetables and animals, we have a pathological anatomy of vegetables and a pathological anatomy of animals; the latter being divided into special pathological anatomy, whose object is the study of one single animal species; and zoological or comparative pathological anatomy, whose object is the comparative study of the same lesions of the same organs in the different species of animals."

In this comprehensive definition we observe with pleasure the importance attached to zoological pathology; but, indeed, in France it has long occupied a recognised position, and has been cultivated with distinguished success. Attention has been

(*a*) The dedication of the *Traité d'Anatomie Pathologique* shows a noble example of individual munificence, it runs thus:

"A la Mémoire de G. Dupuytren, dont la munificence, par un legs généreux, a doté la Faculté de Médecine de Paris d'une chaire d'anatomie pathologique; dont la bienveillance m' a désigné l'occuper.

"CRUVEILHIER."

elsewhere(*a*) publicly drawn to the lamentably deficient condition of our knowledge on this subject in Ireland.

The object which our author proposes to himself in the present work he states to be the pathological anatomy of man, which he considers may be studied under three different points of view, which thus give rise to three distinct species of pathological anatomy, viz.: 1st, General Pathological Anatomy; 2nd, Applied Pathological Anatomy; 3rd, Topographical Pathological Anatomy."

1st. General pathological anatomy studies in an abstract and general manner, and from a scientific point of view, morbid lesions, independently of the maladies to which these lesions belong. Its particular end is the determination and classification of morbid anatomical species.

2nd. Applied pathological anatomy, has for its object the study of morbid species in connexion with the maladies, properly so called, i. e., with their symptoms, their causes, their progress, their terminations, and their treatment; while

3rd. Topographical pathological anatomy has for its object the complete delineation of morbid lesions as they are manifested in each of the regions of the human body, independently of the affinities or the discordances which may exist between them."

He then proceeds to show the connexion of pathological anatomy with the other branches of medical science, with physiological anatomy, with surgery, with medicine, and its general importance; the information which it furnishes us with, as regards the seat of disease, and the organic nature of all lesions, with their diagnosis and treatment, their causes, effects, and prognosis. The consideration of the morbid anatomical species is next entered on, and he thus defines them:

"By *morbid anatomical species*, we understand those groups of lesions which resemble each other in their fundamental characters, and which differ only in secondary characters."

Of the existence of these morbid species we cannot doubt, and the regularity of their occurrence, and the constancy of their characters, the author thinks are not due to the action of a blind cause, but to certain laws, as regular and as sensible of appreciation as those which preside over physiological phenomena. These laws he has thrown into the form of a certain number of propositions:

"I. The number of morbid species is limited.

"II. Morbid species are identical, whatever be their seat.

(*a*) Irish Quarterly Journal of Agriculture, November, 1849.

"III. General lesions, or such as are common to all the tissues, are the rule, and special lesions the exception."

This law, as the author himself remarks, differs fundamentally from the principles of Bichat, who considered every tissue to have its proper lesions, excepting only in the instances of cancer and inflammation, which he considered as common to all. We feel convinced ourselves that the truth lies between these two statements; for, while the opinion of Bichat is untenable as a general rule, it is certain that, in many instances, characteristic phenomena can be observed in the lesions of the different tissues.

"IV. Each tissue, each organ, has its morbid affinities."

This law has undoubtedly practical application, and, if combined with a judicious use of the statistical method, must lead to important improvement in diagnosis.

"V. There exists a certain number of special lesions.

"VI. Anatomical characters should form the basis of the determination of morbid species.

"VII. Anatomical characters are to be sought in the external conformation, and in the textures of diseased organs.

"VIII. The study of the development of morbid lesions is necessary for the determination of species.

"IX. Experimental pathological anatomy is one of the most fruitful bases of pathological anatomy, and consequently of pathology.

"X. Compound morbid species result from the association of a certain number of lesions, and this association takes place in obedience to certain rules, which may be called the laws of morbid association.

"XI. The morbid species are not capable of transformation, the one into the other."

This law, which we must now consider as established for all the phenomena of a pathological epigenesis, is one of considerable practical importance as bearing on questions of prognosis, and lends additional value to the science of diagnosis; it must not be looked upon as contradicting the observations made on the changes effected in exudation plasma,—extravasated blood, and, as our author himself remarks, does not apply to the passage of areolar tissue into fibrous, fibrous into cartilaginous, or cartilaginous into osseous, which he considers as but different stages of development of the same tissues. That hypertrophied or atrophied tissues may become cancerous is not denied, for these hypertrophies or atrophies are not morbid species.

"XII. The existence of a morbid lesion confers immunity against other *species* of lesions."

In this law, which has a certain generality of application, prognosis receives valuable assistance, but it has not such extension as we might suppose at first. Thus, while the cancerous transformation of the fibrous tumours of the uterus is, as follows from the preceding law, a pathological impossibility, the association of cancerous deposit in the intermediate structures of this organ may be found in obedience to the laws of morbid association.—(Law X.)

"XIII. The living tissues are unalterable by themselves."

This proposition receives important support from the chemico-microscopical investigation of diseased products, and we anticipate that, ere long, the doctrines of heterologous deposit will supplant those of transformation of tissue. It requires extensive observation yet to show that this law is of general application to all the morbid species.

"XIV. The immediate seat of all morbid nutrition and secretion is in the capillary system."

The important subject of the classification of morbid species follows the enunciation of these important propositions, which we cannot but think must be considered as the fundamental laws of a rational system of pathology. While we must ever feel disposed to look with distrust on systems of classification proposed in the infancy of science, we are not of the opinion of those who consider the amassing of facts as the only duty of the scientific inquirer; and however imperative the necessity of generalizing, after the Baconian method, by induction, in the advanced stages of knowledge, we cannot but think that a certain amount of imagination and hypothesis is essential to the successful pursuit of philosophical investigations, to direct the mind to the consideration of analogous facts, and the collection of observations which tend to the elucidation of a common object(*a*).

The present classification of morbid species, adopted by Cruveilhier, differs very widely from that originally proposed by him, and certainly meets much more fully the requirements of pathological science, as it exists in the present day. It is also much more comprehensive than the system of Vogel. It takes for its basis the material lesions, and though many

(*a*) The Introduction to the *Cours de Philosophie Positive*, par Auguste Compte, contains an able exposition of this doctrine.

phenomena, which we find constantly associated in practice, are thus widely separated, and treated of in distinct groups, perhaps, on the whole, as little inconvenience is thus experienced, as by any other system. It comprehends in all ten groups and seventeen classes:

"First Group.—Lesions of continuity, which presents two classes: 1st, solutions of continuity; 2nd, adhesions.

"Second Group.—Lesions of continuity presenting four classes: 3rd, luxations; 4th, invaginations; 5th, hernias; 6th, deviations.

"Third Group.—Lesions of canalization, presenting three classes: 7th, foreign bodies; 8th, obliterations and contractions; 9th, dilatations.

"Fourth Group.—Lesions of nutrition, two classes: 10th, hypertrophies and atrophies; 11th, metamorphoses and analogous organic products.

"Fifth Group, forming the 12th class: dropsies and fluxes.

"Sixth Group, forming the 13th class: hemorrhages.

"Seventh Group, the 14th class: gangrenes.

"Eighth Group, the 15th class: *lesions phlegmasiques*, comprehending all that characterize the history of inflammation.

"Ninth Group, the 16th class: strumous lesions.

"Tenth Group, the 17th class: carcinomatous lesions."

In this order he proposes to study the phenomena of general pathological anatomy, and the remainder of the first volume is devoted to the consideration of the first two groups, comprehending the first six classes.

The solutions of continuity, a class of the highest importance, not only in surgery, but also in practical medicine and pathology, when taken in their most general extension, he further divides into three sub-classes.

"1st, solutions of continuity, which are traumatic, or the results of wounds:

"2nd, solutions of continuity non-traumatic, or from internal cause:

"3rd, solutions of continuity which are congenital.

The first of these sub-classes is further divided into solutions of continuity, "1st, by wound; 2nd, by contusion; 3rd, by *escarification*; 4th, by rupture; 5th, by fracture."

Each of these subdivisons is treated of with the fullest detail, a most able *resumé* of all our knowledge on them being generally presented. In the section devoted to wounds will be found much of interest to the medico-legal inquirer, while the subdivision on fractures is of particular value. The pathological anatomy of fractures comprehends, first, the pri-

mitive or immediate phenomena; secondly, the consecutive phenomena.

The solutions of continuity of the patella and os calcis by muscular action are,—we think without sufficient reason,—excluded from the class of fracture, and referred to that of ruptures. They would seem in a manner to belong to both these groups. In the consideration of the primitive or immediate phenomena, we have, first, the state of the bone, and, secondly, the state of the soft parts, treated of.

The fracture usually termed longitudinal is regarded by Cruveilhier rather as a splitting (*éclat*) of the bone, similar to the starring produced in the flat bones; and double fractures he regards as *invariably* requiring for their production the simultaneous or successive action of two causes, on two places in the length of a bone.

Under the head of *displacement*, the position of the fragments, the active and passive causes of alterations in position, and the state of the soft parts, are described.

The separation (*décollement*) of the epiphysis is classed with "fractures," instead of with "ruptures," in consequence of its resulting generally from the action of external violence in a manner exactly identical to that by which fractures are produced. An important distinction is laid down between separations of the epiphysis which are traumatic, and those which, succeeding to disease, must be classed with consecutive fractures, or those from internal cause. With regard to the separation of the epiphysis during intra-uterine life, Cruveilhier is of opinion that all the cases of this kind recorded must be referred to the effects of putrefaction, as it would seem that in all the instances in which this lesion was observed the fœtus was still-born, and no observation has been recorded as to the absence or presence of putrefaction.

The observations of M. Rognetta on separation of the epiphysis during labour, by the traction exercised on the limbs, are considered by Cruveilhier as establishing the possibility of producing the lesion in this manner; while from the results of the experiments of M. Géuretin, and MM. Jarjanay and Bonamy, it would appear that no amount of mechanical violence could succeed in producing separation of the epiphyses.

Under the class "ruptures," the various solutions of continuity in tendons, ligaments, muscles, arteries, veins, nerves, bones, &c., which result from tension or distention of organs beyond their natural extensibility, are placed.

In the "ruptures of the hollow viscera," attention is drawn

to the rarity of rupture of the human stomach independently of organic lesions, and the remarkable frequency of this accident in the ruminantia, from the accumulation of gas, constituting the disease known to veterinary surgeons by the name of *hoove.*

The class "escarifications" is divided into, first, escarifications, the result of contusing bodies impelled with great velocity (wounds by fire-arms); second, escarifications by strangulation, viz., hernia and paraphymosis; third, those which result from the accumulation or subtraction of caloric; fourth, those by cautery.

The question of the "causes of death in solution of continuity," whether the result of wound or surgical operation, is next considered, and at great length.

"These causes of death are capable of being divided generally into, 1st, causes of death by primitive accidents; 2nd, causes of death by consecutive accidents.

"The causes of death by primitive accidents are: 1st, the lesion of an organ indispensable to life, or a great mutilation; 2nd, stupor; 3rd, convulsions—*eclampsiques* (*epileptiformes*); 4th, hemorrhage; 5th, introduction of air into the veins."

In the details of the fifth subdivision we find a *resumé* of all the knowledge accumulated on the important subject of death by the introduction of air into the veins.

Bichat was of opinion that the introduction of any quantity of air into the veins caused death by the brain, and consecutively by the heart. The experiments of Dupuytren go to prove that, although the sudden injection of a certain quantity of air caused instantaneous death, the slow and gradual injection of nearly an equivalent quantity was not incompatible with the continuance of life. For the introduction of air into the veins a certain force acting from within appears to be necessary; this force we find in the inspiratory effort, but it would also appear that certain conditions of the orifice, in the wounded vessel are to be looked for.

"1st, The wounded vein must be sufficiently near the centre of the circulation, in order that the force of inspiration may be capable of acting on it; 2nd, the walls of the vessel must be maintained separated, and a patulous opening be presented. Thus, in most of the operations which have been followed by penetration of air into the venous system, mention is made of veins adhering to the surface of tumours on which traction had been made, so that the walls of the veins and the lip of the orifice must have been maintained separated and patulous."

A remarkable sound has in all cases accompanied the entrance of the air. An examination of the body in cases of death has generally shown:

"A distention of the right auricle alone, or of the auricle and ventricle of the right side, all the veins containing air, bubbles of which are observed through the columns of blood, a considerable quantity of air in the pulmonary artery and its divisions, and, according to several observers, air in the aorta and its branches. From these facts, it follows that death takes place by the heart, the lungs, and perhaps the brain. The rarefaction of the air, a theory brought forward to explain the cause of death, is untenable, for it is proved that in passing from the temperature of melting ice to that of boiling water, atmospheric air augments only three-eighths its volume. Nysten has obtained some curious results from the injection of other gases into the veins, and has established the fact that their chemical agency has considerable influence on the contractions of the heart."

The consideration of the causes of death by "consecutive accidents" is next taken up. To the pathology of tetanus the labours of all inquirers have added but little, and from his own examination of the nervous centres, and their enveloping membranes, Cruveilhier has arrived at no positive results. In regard to its physiological pathology, the following observations of this distinguished writer deserve consideration:

"As physiological pathology has taught us that death takes place in tetanus, when the spasm attacks the muscles which preside over respiration, deglutition, and phonation, one is tempted to inquire whether it would not be possible to substitute for the convulsive contraction, a voluntary, permanent, and energetic action of these muscles. Such was the thought which directed me in the following case.

He then proceeds to detail a case in which a young and vigorous peasant labouring under tetanus, the result of the forcible separation of the thumb from the hand, was cured by the application of this principle.

"The patient was young, and full of life and courage, and I ventured to assure him of being cured if he submitted to my orders. I placed myself before him, and instructed him to respire in a measured time, making as deep inspirations as possible. To direct him in this fatiguing exercise, I beat before him the measure *à deux temps.* During an hour there was no attack of suffocation or strangulation. My place was taken by assistants, who relieved each other, and at the end of four hours, the patient fell into a profound sleep. On his waking, the same system was recommenced, which was again followed by sleep. After the suspension of this treatment, there

were slight exacerbations, but they speedily gave way, and he was completely cured."

In another case this practice was found inapplicable, owing to the want of docility on the part of the patient, who was subsequently cured by the use of baths and cold affusion.

The following passage presents a brief *resumé* of all our knowledge of this singular affection, than which no other more forcibly points out the imperfection of our art.

"Let us never forget that pathological anatomy has established the absence of all lesion in tetanus; that those affected die of asphyxia; that this asphyxia is produced by the convulsive action of the muscles of respiration and deglutition; and that consequently tetanus is not incurable from its nature, and that the therapeutic problem to be resolved is the controlling of the spasms of these muscles."

Amongst the most remarkable of the causes of death by "*general consecutive accidents*," are traumatic fever, visceral inflammation, and phlebitis, which are severally treated of at length. In considering the question of visceral abscesses, the following passage occurs:

"These abscesses are the result of a capillary phlebitis in the viscera, a secondary phlebitis succeeding to a primitive phlebitis, which may affect equally the capillary system of veins as those of middle and large calibre."

The non-traumatic solutions of continuity, or those which may be considered consecutive, form the subject of the second sub-class, in which those which result from inflammation, spontaneous softening, and gangrene, are described; while the third sub-class comprehends the congenital solutions of continuity. In this section we find a very excellent classification of all the anomalies of organization. Passing over the greater number of these lesions, our attention is arrested by the section on congenital fractures, separation of the epiphyses, and section of limbs. The evidence hitherto adduced in favour of the occurrence of fracture during intra-uterine life, Cruveilhier thinks not at all conclusive. The agency of external violence has been adduced to explain the occurrence of these accidents, such as falls sustained by the mother, blows, &c. The majority of these cases may be with more justice referred to the causes operating during labour; for example, extraction by instruments with regard to the separation of the epiphyses,—this, as we have before remarked, he is disposed invariably to consider as the result of putrefaction. In treating of the section of limbs, the author

alludes to the observations made in the Irish school of medicine on this subject, to which our continental friends have added little not before known to us.

The consideration of "adhesions" forms the subject of the second class of the first group of morbid species or lesions of continuity.

This class is subdivided into—"1st order, restorative adhesions; 2nd order, morbid adhesions; 3rd order, congenital adhesions."

The first order, which constitutes the adhesive inflammation of other authors, presents many subdivisions, and we find the subject of "*engrafting*" and the reunion of parts completely severed from their continuity with the body, largely treated of.

The adhesions of solutions of continuity in bones, or fractures, are next considered, and the history of *callus*, from Duhamel to Cruveilhier, fully entered into. The opinions of this latter distinguished pathologist are presented in the following propositions:

"It follows from what precedes, 1st, that the consolidation of bones takes place not only at the expense of the periosteum, but also at the expense of all the lacerated parts which surround a fracture; but that the periosteum *can* suffice for the formation of the callus, when there is no displacement. 2nd, That the blood goes for nothing in the consolidation of fractures; that it is an obstacle, and not a means of union. 3rd, That there is in every case of fracture a secretion of plastic ossifiable lymph, which is infiltrated into all the soft lacerated parts which surround the fragments, and which forms the true means of union. 4th. That the fragments of a fracture in no way contribute to their own union; that they are inert, similar to what results from the section of the branch of a tree; that at no period of the consolidation do we find any work (*travail*) in the fragments, and that in this the bones behave themselves as the soft parts. 5th. That there do not exist two species of callus, a provisional and a definitive callus, in the sense that the definitive callus is the result of a process proper to the end of the fragments, which succeeds to a provisional callus having its seat in the periosteum. There is but one and the same callus, spongy in the first period of its formation, which answers to that which is called provisional callus; compact in the second period, corresponding to what is called definitive callus. The callus is truly a new bone, which runs through the same stages as normal ossification, and is nowise an osseous concretion."

Passing to the third order or "Congenital Adhesions," we find them subdivided into "adhesions between the parts of the same fœtus, and adhesions between two fœtuses." Under the former we find classed all the imperforate conditions of

natural orifices, adhesions of the symmetrical organs, &c.; under the latter, the different monstrosities which we term double, and for which a nomenclature is introduced, based on the parts of the body by which the two fœtuses are united, viz., cephalodymie, somodomie, &c.

A subdivision treats of double *parasitic* monsters, in which one fully developed appears as it were to carry implanted on it another atrophied and which seems to draw life from it. On the question of inclusion, the theory which appears most satisfactory to our author is as follows:

"The penetration of a fecundated germ into another fecundated germ: the *intussusception*, to make use of the expression of Dupuytren, in the case of a double conception, so that the included fœtus is the brother and contemporary of the fœtus which includes, and is conceived by the same act of generation."

In the third class which forms the first subdivision of the second group of lesions of continuity, the phenomena of "Displacement by luxation" are considered, and we find a subdivision into—1st, primitive or traumatic luxations; 2nd, consecutive or spontaneous luxations; 3rd, congenital luxations. It will be observed, that this great class of solutions of continuity can only be considered as theoretically perfect, for in practice it is necessary always to take into account that luxations are complicated with solutions of continuity, in the rupture of ligaments, &c., while in many instances a solution of continuity of bone accompanies the displacement. All the questions connected with the change in length, obliquity, rotation of the bone on its axis, are treated of fully. In speaking of the kinds and species of luxations, allusion is made to the imperfection of our present nomenclature, a point on which all scientific surgeons must feel the want of something like a correct and accurate classification, and some examples of the nomenclature which originated with M. Roux, and was developed by M. Gerdy, are given; thus the luxation forwards of the humerus is termed, sub-coracoid luxation, that backwards, sub-spinous, &c.

Under the head of "practical consequences of the facts of pathological anatomy relative to traumatic luxations," are considered those relative to the symptoms of luxation, obstacles to reduction, and the treatment.

Passing over the second order, which considers the luxations consecutive on chronic articular inflammation, comprising spontaneous luxation of the occipito-atlantoid, atlo-axoid, and coxo-femoral articulations, and those from the long continuance

of vicious position (that of the first phalanx of the great toe being the type of the latter), we are brought to the third order, or congenital luxations.

In this important section we find honourable mention made of the labours and careful pathological investigations of Professor Robert W. Smith, and full details are given of all the points at issue between him and the distinguished author of the *Anatomie Pathologique*. Of the congenital dislocations of the humerus, Smith recognises two forms, the sub-coracoid and the sub-acromial. Four of the cases detailed by Smith, Cruveilhier is disposed to look upon as examples of displacement of the articulation due to the paralysis of the deltoid which was present. He states that many cases of paralysis of the upper extremities, or merely of the deltoid, which took place in early infancy, as the result of convulsions or muscular pain, have presented to him exactly similar phenomena. This point certainly is deficient in the details of Smith's cases, which varied from nine to twenty-nine years of age at the time when his observations were made, and of course the statements of patients, as to the length of time they had been subject to the injury, are without much value; however, the anatomical and other characters are so distinct, that to us it would seem that mere paralysis of the deltoid would be insufficient to account for the lesion, and Cruveilhier omits all detail of the pathological condition in his own cases. The two subsequent cases by Smith are considered by Cruveilhier as true examples of congenital luxation. A third case is added, which is described as *probably congenital*. The next form of dislocation given is the congenital luxation of the radius backwards on the humerus, of which two cases are enumerated.

In reference to the disputed case of dislocation of the wrist-joint, described in the *Anatomie Pathologique*, liv. ix., there designated a dislocation of the fore-arm backwards on the hand, presenting an example of luxation of the carpus without fracture, but which, according to Smith, must be looked on as a case of congenital malformation,—in support of which view he brings forward a case of double malformation,—our author says:

> "I in nowise refuse to admit the explanation given by Mr. Smith of the fact which I have represented under the title of luxation backwards of the fore-arm on the hand, which he considers as an example of congenital luxation."

The congenital luxation of the hip-joint, it appears, was known to Hippocrates; but the first pathological details were

published by Palletta in 1788, while the memoir of Dupuytren did not appear until 1826.

The existence of congenital luxations being established beyond denial, certain questions arise, which we find put in the following order:

"1st, Do there exist differential anatomical characters, which enable us to distinguish congenital from accidental luxations of the femur? 2nd, Are these differential characters manifest in the living subject? 3rd, Have we sufficient data to arrive at the determination of the causes of congenital luxation? 4th, Is the reduction of congenital dislocations possible?"

In the great majority of the cases observed, the dislocation has been double. The anatomical characteristics to be looked for are, "the lengthening, without rupture, of the fibrous capsule, the configuration of the cotyloid cavities, the disposition of the head of the bone;" all these grounds of diagnosis are considered at length. The second question, as to the existence of differential characters in the living subject must likewise be answered in the affirmative. The entire of this important section demands the most careful perusal, presenting as it does an admirable and most complete *resumé* of all our information on these important and interesting subjects.

The fourth class comprehends "Displacements by invagination," of which we find five subdivisions.

"1st, invagination limited to the mucous membrane; 2nd, invagination by three cylinders."

In this form we find the mucous and serous surfaces arranged as follows:

"1st, in the centre are two mucous surfaces, belonging to the internal cylinder; 2nd, in the middle, two serous surfaces, belonging, the one to the internal, the other to the middle cylinder; 3rd, more superficially two mucous surfaces, the one belonging to the middle cylinders, the other to the peripheral cylinder; 4th, the serous surface of the peripheral."

The clinical characters of this species are highly important, as they offer us a means of diagnosis between this lesion when it becomes strangulated, and the more obscure forms of hernia. The phenomena on which our diagnosis must be founded are but two; these, according to Cruveilhier, are:

"1st, the presence of a tumour, more or less considerable; 2nd, the expulsion by the anus of a great quantity of sanguineous mucus, a sign which is never absent, and which I consider as pathogno-

monic. In a great number of cases there is dysenteric tenesmus. 3rd, invagination by two cylinders."

Of this form, likewise, many subdivisions are presented, based principally on the anatomical characters of the lesions. The fourth and fifth species comprehend invaginations of the uterus, the bladder, the mamma, traumatic invagination, and the congenital forms. Of the last, the inversion or rather extroversion of the bladder and the uterus, accompanied by deficiency in the abdominal walls, is the most remarkable.

The fifth class comprehends the "*Displacements by hernia,*" and forms a most important section. The classification presented to us enumerates the following forms:

"1st, tunicated hernias; 2nd, aqueous hernias; 3rd, traumatic hernias; 4th, hernias by eventration; 5th, hernias by separation of the parietes of cavities (*éraillement*); 6th, hernias by the natural rings."

The first form is confined to the tunicated organs, in which, by the separation of the fibres of one coat of a viscus, such as the bladder, a protrusion of the subjacent ones takes place. The type of this form is to be found in the bladder. They have been also observed in the inferior part of the pharynx, the commencement of the œsophagus and the rectum, and the sigmoid flexure of the colon. The second class comprehends the affections termed cranial hydrocele, hydrocephalacele, congenital hydrocele, and spina bifida. Passing over the remaining subdivisions, which contain a very complete classification of all the varieties and the enumeration of the most remarkable cases put on record, our attention is arrested at class 6, which considers

"Hernias by the natural openings of the splanchnic cavities, or ordinary hernias;—or those by the natural rings."

These present for our examination:

"1st, the changes effected in the rings; 2nd, the parts constituting hernias; 3rd, the complications and accidents of which they are susceptible; 4th, what we must understand by congenital hernias at the natural rings."

Each of these questions is treated at considerable length. Under the third head, "Complications and accidents," we find strangulation of hernias fully considered. The fibrous rings Cruveilhier believes to act only a passive part in strangulation, as the following observations are intended to show:

"The fibrous rings, as well as the neck of the hernial sac, are

completely passive in strangulation, for they are not submitted to any variation in their diameter, being neither elastic nor contractile; the parts displaced, on the contrary, are eminently variable in their volume, and it is in them the disproportion is established, whence strangulation results, and which is the more easy in proportion as the rings are more narrow and resisting."

In this statement no account is made of the opinions of Mr. Guthrie, and other British surgeons, who have described the boundaries of the internal ring as muscular, owing to the peculiar arrangements of the inferior fibres of the transversalis abdominis. In his Treatise on Practical Anatomy, also, M. Cruveilhier has omitted all mention of this opinion, and describes the posterior boundary of the inguinal canal as formed by the transversalis fascia(*a*).

"The seat of strangulation is most usually on a level with the fibrous ring, or, what comes to the same thing, on a level with the neck of the sac."

The pathological anatomy of hernia which has been strangulated presents for consideration different conditions, referable to a first and a second period, which are treated of at length.

The section on congenital hernia is neither very full nor does it add anything to already recorded observations.

The sixth class, which forms the last of the second group, comprehends "Displacements by deviation." This section presents us with a classification of all the congenital or accidental displacements which do not enter into the categories hitherto enumerated, and which consist in a change of direction or relative situation of the hard and soft parts, viz., rachitic curvatures, splanchnic inversions, &c. With this section, the consideration of the second group, and the first volume close. As has been seen, the majority of the subjects treated of belongs to the domain of *surgical* pathology; but we have much gratification in remarking that so influential an author as Cruveilhier has practically, by the adoption of a comprehensive system of classification, done much to abolish the unscientific and arbitrary distinctions that separate medicine from surgery. In the present advanced condition of our knowledge, when facts have become so multiplied, that not only medicine and surgery are cultivated as specialisms by different observers, but when each of these departments exhibits a tendency to further subdivision and the establishment of an increased number of specialists, it must be ever borne in mind that we are all but workers in one

(*a*) Library of Medicine, vol. vii.; Cruveilhier's Anatomy, vol. i. p. 400, *et seq.*

common science, and that our labours, however unconnected they may appear, whether pursued in the hospital or the laboratory, directed to the microscope or to the numerous other media of investigation, have all one common end, one common tendency. By a gifted few only will the general appreciation of, and acquaintance with all departments be attainable.

To all who are interested in scientific pathology we earnestly recommend the admirable work of Cruveilhier, not as a book to be considered the repertorium of all that is now embraced by this, perhaps the most comprehensive of the departments of medical science,—for, as we have already stated, it does not pretend to deal with the labours of the pathological chemist or histologist,—but as the most complete treatise on general pathology we are acquainted with. We anxiously await the publication of the next volume.

A few Suggestions on Consumption. By Robert Hull, M. D., Physician to the Norfolk and Norwich Hospital. London, Churchill. 1849. 12mo. pp. 138.

Thoughts on Pulmonary Consumption, with an Appendix on the Climate of Torquay. By William H. Madden, M.D., Physician to the Torbay Infirmary. London, Churchill. 1849. 12mo. pp. 219.

Though we always hail with pleasure the appearance of publications emanating from the medical staff of the English or Irish provincial hospitals, we are compelled, through an imperative sense of duty, to pronounce, after mature deliberation, and careful perusal of the above works, that they do not, in any one particular, fulfil the requirements of medical publication. However small the field of observation, there is not a medical establishment, from the humble dispensary to the well-appointed county hospital, that could not be made instrumental in the advancement of professional knowledge, did a well-directed spirit of inquiry, and a little elevating enthusiasm, fall to the lot of those on whom devolve the responsibility and charge of such establishments. The patient pursuit of a single investigation, even by one endowed with the most humble and unpretending abilities, would be certain to lead to important results; and if every practitioner possessing ordinary opportunities of observation undertook a little special inquiry on any of the numerous forms of disease, we should arrive at the elucidation of many important questions of pathology, diagnosis, and treat-

ment. "Pourquoi craindre de montrer à tous les yeux les vides de la science? Au moins, l'attention de tous serait éveillée sur ces lacunes, et des travaux arriveraient en foule pour les combler(*a*)." Such should be the spirit of medical inquiry and of medical publication. What department is so complete that it could not be enriched?—what that could not be further elucidated, even by humble ability, if earnestly and judiciously directed?

Medical publication, then, if we do not greatly err, should contemplate a certain amount of new matter to be added to the general stock of knowledge, a certain amount of originality, the diffusion of new views on disease and its treatment; while the accumulation of testimony on points still *sub judice*, or confirmation of hitherto generally received doctrines, we are of opinion comes more particularly under the department of journalism. Believing these views to be correct, the publications of Drs. Hull and Madden must be pronounced wanting in the most valuable qualities.

To the duties of authorship Dr. Hull has brought some acquaintance with the classics, a vein of maudlin wit, but neither much power of observation nor great judgment. If erudition consists in free quotation, we shall concede to him a sufficiently extensive acquaintance, not only with the classics of antiquity, but with the classics of medicine, both modern and ancient; and though the labours of the chemico-pathological school are not alluded to with any high marks of approbation, a poetical version of some of the organic compounds is introduced which sounds trippingly enough, and no doubt displays an elegant Latinity.

"Do the finer analysis of modern chemistry subserve the practitioner treating phthisis? Can he chant to victory from an acquaintance with the protein compounds;

"'Pepsin seu ptyalin, chondrin, glutinve, pyinve.'"

But hexameters give only a faint idea of the Doctor's classical predilections; his patients, at least all those in the higher walks of life, enjoy classical names, being severally denominated Uranius, Prasinus, Victor, Narda, Altella, &c. Hero-worship still characterizes the human race, and in this quality the author of the "Suggestions" excels; he sacrifices to Sydenham, too, and in the matter of equitation, as amongst the most efficient of our curative agents, urgently impressing with the necessity of following to the letter the maxims of this great observer; but we think the transition from the sublime to the vulgar a little too sudden in the following:

(*a*) Cruveilhier, *Anatomie Pathologique*, liv. ix.

"We allow Sydenham to be the closest observer, the prince of English physicians, the most successful of curers, the most unimpeachable of writers; yet we heed him not, when he discusses the subject of phthisis, so fatal to our countrymen, when he promises salvation if our invalids will but ride, eat, and drink like—*bagmen.*"

Exordium is discarded and we are soon carried "in medias res." We find that cod-liver oil receives a sort of doubtful and guarded expression of approbation, but,

"Porter is often the best beverage, if it can be obtained unadulterated,—the true, simple, honest liquid."

While a pretty large proportion of the articles of the materia medica, which are enumerated, receives a very sweeping condemnation, opiates are more especially signalized. Speaking of cough, which we all know to be such a distressing feature in many cases of phthisis, he says:

"Cough is an effect; he who would remove it should attack its cause. Cough indicates that something exists, irritating the lungs, like a foreign body, requiring expulsion. To allay with opiates is to render the lung insensible to this foreign body, but not to abolish the evils of its presence; it is masking the disorder. Here, 'ex opiatis, tanquam a peste, fugiendum est.'"

Again:

"Of opiates, I cannot repeat too often that they are lethal."

As to the precise means to be adopted "for the expulsion of this foreign body," we get no very positive information, beyond what is conveyed in such vague general statements as the following,—"I wish them to distrust expectorant and above all *narcotic* drugs, and to rely more on nature and her *unhampered* powers." While the nearly universal condemnation of medicines, and such puerile sneers as, "if then we wait for a practical pathology, founded on a precise and undisputed chemistry, on the delightful harmony of Messieurs Gütterbock and Preuss, now, alas! at variance concerning certain relations, we may perhaps delay until ourselves and our patients, phymantine, pyine, and all, undergo the final decomposition," show the writer is utterly incapable of appreciating the progress or tendency of modern medical science, and very unlikely to lend a helping hand to advance it.

The indulgence of a classical taste, and a liberal use of appropriate quotations, we consider as eminently ornamental in the machinery of book-making. Even the pedantry of Dr. Hull, which, not satisfied with heading every chapter with a Greek or Latin quotation, either in verse or prose, scatters

them likewise in profusion amongst his pages, we could pardon; but in the name, and for the high honour of medical literature, we must enter our protest against such unworthy and grossly vulgar applications of classical knowledge as contained in the following, which would make the pages of the veriest punning, illiterate scribe blush with shame. Speaking of the administration of enemata, he says:

"It produces the very constipation which it is intended to obviate, because it produces permanent dilatation of the rectum bowel, whose distended and flaccid tunics cannot contract upon and extrude the ordinary and natural volume of contents. Great dilatation and great contraction of this bowel equally disturb its function:

'Sunt certi fines
Quos ultrà citraque nequit consistere *Rectum*.' "

But we think we have quoted enough to show the general spirit and value of this unhappy publication, one of which we can see neither the beginning nor the end, and much less the utility.

The little work of Dr. Madden certainly gives us a more favourable impression of the author, and if it be largely deficient in the element of originality, we find no meaningless sneers at the labours of the histologist or the chemical pathologist. In the general observations which immediately precede the subject matter, the following passage occurs:

"It is perfectly clear that we must learn what tubercle really is, if we would adopt correct views of the disease of which it is the great characteristic. How is this to be done? The mere scalpel of the anatomist will not suffice; for though by it we obtain most valuable information, though we ascertain the position which tubercle occupies in various organs, the relative frequency with which it attacks the different viscera, the changes which it undergoes in itself, and to which its presence gives rise in the parts which are its seat, we do not thus discover its nature, nor perceive clearly how it differs from other morbid products; we must apply higher methods of analysis, we must investigate its intimate structure by the aid of the microscope, and submit it to the test of chemical analysis."

Preuss and Gütterbock have met more favour from Dr. Madden than from the author of the "Suggestions." In the section on the chemistry of tubercle we find enumerated the several analyses of Simon, Boudet, Preuss, Gütterbock, &c. The very imperfect analysis of lymph by Dr. Glover is given, without any mention of that made by Geiger under the direction of Schlossberger. Altogether, this section, which occupies but eight small pages, is very imperfect. Under the head of "Histology of Tubercle" we are furnished with some of the

results of the author's microscopical researches, which are only confirmatory of hitherto recognised phenomena; and while the names of Addison, Lebert, and Bennett, are frequently alluded to, all mention of the labours of Vogel, or of his valuable *Icones Histologiæ Pathologicæ*, is omitted altogether. The three remaining sections of the first part of the book are devoted to the consideration of the state of the blood in phthisis, the state of nutrition, and the identity of scrofulous and tubercular disease; all occupied with a brief *resumé* of the labours of others, which, owing to the small size of the work, is very much abridged, indeed so much so as to prevent it from ever becoming a standard of reference. The second part treats of the "Manifested Disease," under which head we find a number of sections. The first, on "The Forms and Varieties of the Disease," is extremely imperfect; but on this point our author thus excuses himself:

"As I am not writing a systematic work on phthisis, it is not necessary to enter more particularly into a consideration of the varieties of the disease, which are continually presented to our notice in practice. They involve no new *principles*, and it is with principles generally, and not with specialties, that these pages are occupied."

We regret that the following out this idea should have resulted in the production of a work of very limited, if any, utility;—too imperfect to become a text-book for students, too brief and not sufficiently *clinical* for the practical man, and not *special* enough for the philosophic inquirer. We should really find a considerable difficulty in assigning it an appropriate place in a medical library.

We are next presented with a very hasty sketch of *some* of the symptoms, while a long section is devoted to the question of "Analogies with Diseases arising from morbid Poisons," in which, notwithstanding a long category of diseases which result from morbid poisons, with their principal symptoms, we cannot help thinking the author has omitted everything like proof of his position, whether it be true or not. Mercurial action, painter's colic, syphilis, glanders, &c., are described, when, without any previous allusion to phthisis, we are suddenly informed "*such are the functional resemblances.*" This statement is followed by a detail of some observations on tubercle by Louis and others, but the application of the argument is altogether imperfect, and instead we find the following conclusion:

"Our comparative sketch is thus concluded; and it appears to me impossible to read what has been written without being powerfully impressed with the striking resemblance which obtains between the two series of morbid actions. There are the same extensive

functional disturbances, the fever, the profuse unhealthy sweats, the disordered secretions, the emaciation, the prostration, and the same wide-spread organic lesions. Must not the causes of effects so similar be themselves similar? Must they not, to say the least, have something common in their nature?

The section on diagnosis is, like the others, a compilation, and even in this point of view too hasty and brief to be of value; while that on treatment, indulging more in disquisition than clinical facts, deserves little notice.

Before leaving this subject we would again earnestly call attention to the important advantages presented by the provincial hospitals for clinical observation. We can point with pleasure to many instances in which they have been very fully availed of, both in England and Ireland, and with the most successful results to medicine. To our friends at home we would offer a word of friendly exhortation, particularly at a moment when we anticipate a vigorous impulse to professional interests in the provinces from the recent establishment of the Queen's Colleges. Well acquainted as we are with the high standard of education which is to be found amongst our medical brethren in the north and south, we have only to regret that their labours have been hitherto conducted silently, though usefully, and even, within a limited sphere, effectively. Henceforward we cannot but hope for a better appreciation of the requirements of medical science, not only as to the tendency which should be given to special labours, but also as to the necessity of making them known to the world. Indeed, both for our capital and the provinces, we foresee the approach of a new medical era.

The First Medical Report of the Hospital for Consumption and Diseases of the Chest. Presented to the Committee of Management by the Physicians of the Institution. London, Churchill. 1849. 8vo. pp. 42.

We have perused this Report with unfeigned pleasure. Nothing equal to it in value has ever emanated from a British hospital; and nothing, we verily believe, so likely to leave a permanent impression upon the medical investigators of our time. We have here placed before us a strict statistical analysis of the most important facts concerning 4358 cases of consumption, a greater number than has been yet submitted to a similar process of analysis, and having the stronger claim upon our attention, as the reporters state, from its including in it only those in whom the existence of the disease admitted of

no doubt." The Report is the collective production of *all* the medical officers, with the exception of Dr. W. H. Walshe, who, we know not why, separated himself from his colleagues, and published a distinct report in the British and Foreign Medico-Chirurgical Review, in January, 1849.

When we saw the names of six physicians appended to the present Report, we could not help feeling astonishment, mingled with deep satisfaction, to think that, in these days of jealous rivalries, six men could be found to unite for a common scientific purpose, in a task which obviously involved great care and labour, and the performance of which required something more than board-room good feeling among those engaged in it. Without further preface we shall now lay before our readers the chief results of their inquiries.

The Report is arranged under the following heads: 1st, the number of patients treated, and the facts in their history which have reference to the origin and progress of consumption; 2nd, some of the principal signs and symptoms of the disease; 3rd, the duration of the disease, and the results of treatment.

The first table simply informs us that out of the 4358 cases analysed, 888 were in-patients. In the second we find that of these 888, 542 or 61 per cent., were males; and that out of the 3470 out-patients, 2137 or, as nearly as possible, 61 per cent. also, were males. This, as is remarked in the Report, shows that the common idea of phthisis being more prevalent among females than males, is scarcely in accordance with observations made in London, though the writers are quite aware that the common notion upon this matter is borne out by those made in the country(*a*). But they do not seem to be aware that the fact had been previously noticed many years since, and that the greater prevalence of phthisis amongst males than females, in the admissions into the Royal Infirmary of Edinburgh during the years 1833 to 1837, was commented on in a Report published by Dr. Home, in the forty-ninth volume of the Edinburgh Medical and Surgical Journal: the numbers being 185 males and 112 females, while the admissions for all diseases during the same period were 4512 males and 4749 females.

Table 3 shows the ages in decennial periods of 2679 males, and 1679 females, labouring under pulmonary consumption, and the per centages of the sexes at each period of life. From this table it is inferred that the liability to con-

(*a*) This fact has been carefully examined by Dr. Duncan in his essay on the statistics of phthisis in our last and present Numbers, and very important principles deduced therefrom.

sumption is greatest in both sexes from twenty-five to thirty-five years of age. This agrees, as far as comparison can be made, with the tables given by Sir James Clark, who states the maximum mortality to be at the age of 30. It is further proved by the table that under twenty-five years of age the liability is greater in females than in males by nearly 10 per cent.; whilst above thirty-five, the liability is greater in males than in females by about 12 per cent. The authors consider the greater liability of females to the disease, before the age of 25, to depend in some measure upon the earlier manifestation of hereditary predisposition in them than in males. But while the Report before us compels our assent to this observation, we think it must be fairly allowed that there are other and more obvious modes of accounting for the fact. At the age of 25, speaking generally, woman has felt all the emotions, and passed through most of the trials, she can experience. The frame, not yet developed to its full maturity, has been already shaken, if not mayhap shattered, by the influence of the most powerful moral emotions and physical sensations, which can affect her delicate organization. We will not affirm that the precise contrary to this holds with the other sex, but that the most fiery trials of man,—the daily cares for the bread of poverty, the anxieties ever awaiting upon commercial life with its manifold fluctuations, the perpetual wear and tear of the mind engaged in literary toil or political strife,—do for the most part affect him at a much later period of his existence than that just named, admits of no doubt. We believe that if this Report extended to all ranks of society, the authors would not arrive at a different result, but that they would ever find a greater proportionate number of phthisical females before the age of 25, and of males after that period. But this point has been so fully and ably discussed by Dr. Duncan in our present Number that we feel we need not delay on it here.

The moral causes of disease cannot be made the subject of such statistical analysis as may be relied upon; hence their influence can only be computed in a very general manner. They are in this respect a stumbling-block in the way of the many who in the present day boldly advance the claim of statistics to be the sole arbitrator and mode of proof in medical questions. We should be indeed rash, in the face of this Report, to deny the immense benefits which *sound* statistics are capable of conferring upon medicine; but we warn those who, in their researches concerning etiology, and many other important points connected with disease, forget the influence of these causes, that they will find ever-recurring insoluble phenomena,

which resist the whole force of the strongest statistical battery that can be brought to bear upon them. If there be any disease, concerning which these remarks can be most justly made, it is phthisis, which indubitably owes its origin in a large number of cases to mental emotions.

But we must now give the inference from this table in the words of the Report:

"On the other hand, males are subjected to various influences, resulting from their pursuits, habits of life, trades, and occupations, tending to the development of the disease at a later period of life. The practical conclusion, however, to be derived from the examination of these facts, is this, that the period of human life from 25 to 35 is a most important one in both sexes, as far as the development of consumptive disease is concerned: hence the peculiar necessity of guarding against all those circumstances which may tend to the production of the disease, and of carefully watching the earliest indications of its approach. The vigilance always necessary is especially requisite in the case of females from 15 to 25, a period of life at which the liability to disease is nearly as great as it is from 25 to 35, when it has reached its maximum."—p. 10.

The next six tables are occupied with the consideration of the social condition, meaning by this term the married, single, or widowed condition of the patients, and their trade or occupation. The influence of occupation in engendering the disease has engaged the serious attention of the authors, as of all philosophic physicians who have preceded them in the inquiry. The difficulties of this investigation are indeed almost insurmountable, for together with the impossibility of knowing accurately the exact number of persons engaged in each occupation, the existence of certain "other influences conjoined with those necessarily belonging to the occupation itself," must render us cautious in accepting inferences from even such carefully drawn up tables as those in the Report. But it is not the fault of the writers if there is any error on this head, as they themselves indicate the above-named grounds for distrust. They have greatly diminished the chief difficulty by comparing the occupations of the consumptive patients at the Brompton Hospital, with those of the patients at a London hospital for general disease. From this comparison the authors are led to assign a high place, as regards liability to consumption, to clerks and shopmen, printers and compositors, among the patients at the Consumption Hospital; while to tailors they assign a great liability to disease in general, as well as to phthisis (*a*).

(*a*) We have had good opportunity of observing this. Tailors are not only very subject to low forms of disease, but, as may be expected, are very apt to succumb to them.

We are much struck with this last result of the comparison. Sir James Clark and all other observers have previously remarked upon the tendency of this latter trade to consumption: that they are also very liable to disease in general most clearly proves the difficulties of the investigation. It has been said from time immemorial that, the strained and peculiar posture of a tailor gives him a tendency to pulmonary consumption, and that, as this is almost indispensable in his calling, his *trade* gives him a predisposition to the disease; but let us consider the "other influences conjoined with those necessarily belonging to the occupation itself." His livelihood is irregular; at various parts of the year he is for weeks without employment; in one portion of every week he is pressed to the utmost of his endurance; frequently in its first portion he has hardly enough to do to keep him from irregularities still more hurtful. As a class they are notoriously intemperate. A great number of them work in one room, with no more than *sewing space* from each other. From a taste for roving which seems inherent in their craft, they frequently, as they express it, go on the tramp for work, which pretty generally produces privations and exposure, if it does not end in the poor-house. Add to this, that a large proportion of tailors are single men, and therefore the victims of syphilis to an immense extent; and we have sufficient grounds for stating that their *occupation* simply, forms but a portion of the cause of their liability to phthisis.

Hereditary predisposition constitutes the subject of the next six tables. The general result of these tables is decidedly in favour of the opinion, that a great influence is exercised by the parent in transmitting phthisis to the child, inasmuch as "nearly one in every four of the consumptive patients at this hospital, was born of a consumptive parent." Perhaps the most remarkable table in the whole Report is the fifteenth, wherein it is shown that the father transmits consumptive disease to the sons in 59·4 per cent., to the daughters in only 43·5 per cent.; the mother to the sons in 40·6 per cent., but to the daughters in 56·5 per cent. This most singular proof of the hereditary influence in general, and specially in relation to the sexes, is worthy of the utmost attention. These tables conclude the first division of the Report, which, in the future Reports promised to us, we hope to find greatly amplified. It is of infinitely greater importance than the remaining two. The authors have indeed told us that many important parts of the subject are still under investigation, such as the connexion of scrofula and consumption, the influence of locality, of habits of life, or of previous disease, in producing consumption; for these we anxiously wait, being well persuaded that it will tend to a greater

amount of practical benefit that these and such like facts should be thoroughly made out, than that we should go on practising a grotesque arithmetic as regards hemoptysis, interrupted breathing, or prolonged expiration. We want undoubtedly, even at this advanced stage of inquiry into tuberculous maladies, a complete knowledge of their constitutional, climatic, and social antecedents. But, beyond all comparison, the most important facts to be yet arrived at are those bearing upon the relation of phthisis to previous disease. We have had of late days something more than enough of pathological antagonisms; we greatly desiderate exact researches into the *sequences of disease*,—the relations through a whole lifeof one great constitutional malady to another,—of phthisis, for example, to rheumatism, to gout, to albuminuria, to the venereal poison, to typhus, and to the exanthemata in general; or, on the other hand, the relations of a profound constitutional dyscrasia to lesions of the great vital organs, as of the heart, &c.

In the second portion of the Report, the first five tables are taken up with the consideration of the diagnostic value of Dr. Hutchinson's observations upon the vital capacity of the lungs in phthisis. That gentleman himself conducted most of the experiments at the Brompton Hospital, the result of which is certainly most highly favourable to the value of his ingenious invention, the spirometer. The nineteenth table shows the vital capacity of phthisical patients, taken indiscriminately, without reference to the stage of the disease, compared with that of the same number of healthy individuals; the average difference being 93 cubic inches, or 42 per cent. in 415 cases observed. The next two tables show in a striking manner the diminished vital capacity as the disease advances, for in 241 cases observed in the stage *before* softening, the difference was found to be 74 cubic inches, or 33 per cent.; while in 174 cases observed in the stage *after* softening, the difference amounted to no less than 116 cubic inches, or 52 per cent. The next four tables concluding this division of the Report confirm the general opinion of the great value of hemoptysis as a symptom of phthisis. In 1381 cases, spitting of blood occurred, at some period or other of the disease, in 870 individuals; that is, in the ratio of 63 per cent. Our authors have arrived at the conclusion, that sex exercises scarcely any appreciable influence in the production of this symptom, 62 per cent. having been males, 65 per cent. females; a result, we must confess, which does not much surprise us. The twenty-fourth table exhibits a fact which does not accord with the general experience of the profession, namely, that while in males hemoptysis appeared uninfluenced by *age*, being as frequent before as after the age

of 35, in females the proportion of cases is greater to the extent of 10 per cent. before that age than after.

"In fact," to quote the words of the Report, "our observations show that hemoptysis occurs more frequently during the *earlier part* of female life, than at that period when the functions of the uterus begin to be suspended."—p. 29.

The early supervention of spitting of blood in both sexes, the most important part by far of its history, is clearly seen in the twenty-fifth table, wherein it is shown that, in the proportion nearly of 3 to 1, it is more frequent in the first period of the disease than in the later stages; a per centage, from obvious considerations, more likely to be below than above the truth.

The third division of the Report opens with a most admirably drawn-up table, showing the duration of phthisis in 215 cases, viz., 147 males and 68 females, arranged according to age and sex. From this table it appears that considerably more than half the entire number of cases were fatal within a period of eighteen months. Another curious fact is deducible from this table, namely, that the disease is more rapidly fatal amongst males than females; of 123 cases which terminated within eighteen months, 89, or 60·5 per cent. were males. The twenty-seventh and twenty-eighth tables are drawn up to show the results of treatment, from which it appears that in 36 per cent. of the cases, benefit was conferred; material relief in nearly 25 per cent.; arrest of the disease in nearly 6 per cent.,—such an arrest, we are modestly told by the reporters, as "a desire not to speak too confidently alone forbids to designate as cure." These tables are drawn up from in-patients only, the result of treatment among the out-patients having been by no means so satisfactory.

The concluding portion of this division of the Report is taken up with a brief consideration of the treatment, prefaced by a description of the Brompton Hospital. Among other excellent arrangements, we are told that the method of ventilation devised by Dr. Arnott is used here, "and which is so arranged as to supply warm fresh air in a continuous stream, at the rate of 2160 cubic feet per minute, thus allowing to each patient, during that time, more than twenty-three cubic feet. This air reaches the wards so modified as to keep them at the uniform temperature of nearly 65° in winter and summer."—p. 37. It is impossible to overrate the great advantages of such a system as this, in the cold, damp, and variable climate of these countries. In the winter and early spring there can be no doubt that many lives would be saved, and more prolonged, if we could place our poorer phthisical patients in the condi-

tions existing at the Brompton Hospital. But we feel some hesitation in absolutely stating that these conditions would much increase the chance of cure, or of relief, during the finer and warmer parts of the year, or even, among certain patients, at any season. If the patient be in the possession of moderate strength, be not more than usually liable to intercurrent attacks of pneumonia or pleuritis, and, above all, not so completely a pauper as to be unable to obtain the necessaries, with some of the comforts of life, we think decided benefit accrues from exposure to pure, and, if we may use the phrase, *unmedicated* air. We know that there are persons who look upon the air of a thoroughly ventilated, well-arranged, not over-crowded hospital, like the admirable charity at Brompton, as pure enough, and fresh enough, for any purpose; just as there are well-meaning physicians, who consider the noble lunatic asylum of modern days, with its gardens and corridors, its gentle keepers and kindly doctors, as an actual elysium for a man, even though he be not quite so mad as his *relations* suppose; but our own experience leads us to the opinion, that, during the favourable seasons of the year, the open air affords at least an equal chance to the pthisical sufferer, as the best regulated hospital. More particularly does this hold good when the patient is taking cod-liver oil. We have observed that patients when confined in an hospital are sooner nauseated by this remedy; and in the employment of this agent, its prolonged use is of the greatest importance. Everything which renders the stomachs of our patients less tolerant of this most valuable remedy, renders their cure less probable. Benefit obtained, during residence in an hospital, under the use of the oil, we have seen to be confirmed, and often increased, by exercise in the open air, its use being still persisted in. We may add that, if the oil agrees at all, it is likely to prevent the patient feeling so acutely the influence of the only agent that can injure him, namely, cold(*a*).

Among the remedies employed, naphtha is first named, and, as we expected, its use produced no beneficial effect, except in the complication of bronchitis attended with profuse secretion. This much-vaunted remedy is indeed already well nigh forgotten, as all unbiassed observers now admit that its action is

(*a*) We hope we shall not be misunderstood by our readers as counselling, under all circumstances, *unlimited* exposure, or as wishing to throw doubt upon the conclusions of the reporters; but we could not refrain from making these suggestions, fearing lest the evidently greater benefits obtained by the in-patients than the out-patients should induce them to imagine that the carefully kept atmosphere of the hospital was the sole cause of the difference: our object will be gained if our observations stimulate the authors to further inquiry.

but that of a sedative. Of iron it is stated, that "in the first stage of the disease, in the absence of pulmonary congestion and hemoptysis, it has been found useful to the extent of arresting its progress;" and in the later stages "an increase of strength, and a temporary improvement of general health," have been obtained. This is high, but not undeserved praise. There is no remedy, next to cod-liver oil, at all approaching steel in its effects upon tubercular disease; and even when, the oil being given as the main remedy, from the production of nausea by its long use, or by the persistence of diarrhœa, we are often compelled to resort to a temporary substitute; in such cases, the citrate, the iodide, and the acetate of iron, will be found of great value. It is our habit in chlorotic females, or in any individuals who have a decided aversion to the *after-taste* of the oil (which we may add, is the worst part of its taste), to give one of these preparations at the same time, the peculiar flavour of the steel eminently adapting it for the prevention of this.

The next remedy mentioned is the cod-liver oil, of which it may be fairly stated, that there has never yet been proposed an agent for the relief or cure of phthisis, whose merits at all approach its *proved* excellence. Our confidence in making this statement might be very properly based on this Report exclusively, but, satisfactory as are the conclusions therein arrived at, our experience of its use in a considerably larger number of cases than are here tabulated, leads us to confirm in the most decisive manner the opinions of the reporters. We shall not enter as fully into the consideration of the wonderful powers of this oil as its intrinsic merits deserve, for we intend in our next Number to give an analysis of the excellent treatises of Dr. Bennett(*a*) and Dr. De Jongh, on the oleum jecoris aselli; but we must not defer, even for three months, the publication of the following facts: In 542 cases, 190 males and 103 females, taken at all stages and ages, in 63 per cent. the symptoms improved; in 18 per cent. the disease was arrested; and we further find that, when taken in the first stage, the disease was arrested in 28 per cent. Of the whole number treated at the hospital, the disease was arrested in only 5 per cent.; while we have just seen, that of those treated by *this* remedy, it was arrested in 18 per cent. Let it be

(*a*) We feel necessitated to apologize for a certain tardiness in bringing this subject before our readers, the more particularly as we have also, by our delay, done some injustice to the labours of the Edinburgh professor who first brought the cod liver oil prominently under the notice of the British medical public.

remembered that the actual existence of the disease was clearly made out in these cases, and we have here proof of its powers which it is impossible to refute or gainsay. It must be allowed that it is now *demonstrated* to be the most efficient agent "in controlling the symptoms of pulmonary consumption, if not of arresting the disease," that the profession is at present possessed of. The reporters warn the over-sanguine not to expect *always* to cure, or even to relieve phthisis by its use, having seen it sometimes fail, and its temporary benefits sometimes followed by relapse and rapid progress to a fatal termination.

We have thus briefly brought the main results of this careful and admirable analysis of phthisis before our readers. We have already almost exhausted our praise, and hardly think it necessary to repeat our opinion of its great merit, and to advise most strenuously all those who wish for accurate information upon the all-important matter of which it treats, to procure and study this Report.

Portrait of the late Abraham Colles, Professor of Surgery to the Royal College of Surgeons in Ireland. Engraved by C. Lucas, from a Painting by Martin Cregan, P.R.H.A. Dublin, Hodges and Smith. 1850.

In a recent Number of our Journal(*a*) we awarded a due meed of praise to Mr. Stone, of London, for his efforts to afford the profession a series of portraits of the most eminent medical men of the day; and we are happy now to have it in our power to bring under the notice of our readers the above spirited and faithful likeness of one of the most eminent lights of Irish surgery, who, though no longer amongst us, still lives in the hearts of many,—his pupils, his contemporaries, and his friends. We have only just received a finished proof of Mr. Colles' portrait, but we are unwilling to let the present opportunity elapse without noticing its publication. It is not only a beautiful engraving, but most truthfully portrays the characteristic expression of benevolence, skill, and deep thought for which his countenance was so remarkable, and as such cannot fail to prove highly acceptable to all who appreciated and therefore to all who knew him.

(*a*) Vol. vii. p. 199.

PART III.

REPORTS, RETROSPECTS, AND SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

NINTH SESSION.

Caries of the Petrous portion of the Temporal Bone, Abscess in the Substance of the Brain, and Lodgment of Matter between the Dura Mater and the Cranium.—Dr. Banks detailed the following case, and exhibited the recent specimens. J. L., æt. 26, entered the Hardwicke Fever Hospital, November 22, 1847, complaining of pain in his forehead, and a general feeling of illness; his look was dull and heavy. He had a slight discharge of purulent matter from the ear for many years, but three months before his admission it became more profuse and fetid, running out of his ear on the pillow as he lay in bed. Five days before entering the hospital he had slight shiverings, sickness of stomach, and pain in his head. He had latterly become deaf, but the state of the ear never attracted his attention particularly. He had no pain about the mastoid process or in the ear, until after his admission into the hospital. While in hospital the prominent symptoms were, pain in the forehead, very intense at intervals, sometimes altogether absent; feverish heat of skin; the pulse, which was weak, fell occasionally from 80 to 60 and 54; the bowels were constipated; there was a very slight purulent discharge from the ear, of an offensive odour; and he had delirium at intervals. He gradually became heavier and more stupid, the pulse could not be felt at the wrist, and he was insensible for twelve hours before his death. He died thirteen days after his admission into the hospital, and eighteen after the occurrence of the rigors and sickness of stomach.

Autopsy.—There was caries of the petrous portion of the temporal bone, the anterior surface of which was perforated in two places; a probe, introduced through these apertures into the interior of the ear, grated upon loose portions of carious bone. The dura mater cor-

responding to one of the apertures in the bone was also perforated, and presented a dark, sloughy appearance in the immediate vicinity. Corresponding to the carious bone, the brain and its membranes were dark-coloured, and a large abscess existed in the substance of the left middle lobe of the brain, near its inferior surface. There was a second and much larger collection of thick, green, and very fetid pus between the dura mater and the mastoid and petrous portions of the temporal bone, and the lower two-thirds of the left half of the occipital; it extended to the middle line posteriorly and downwards nearly to the foramen magnum. This large abscess had deeply indented the corresponding portion of the brain.

Dr. Banks observed, that although the disease of the bone had obviously existed for a considerable period, it was probable that the cerebral abscess commenced at the time when the patient first suffered from acute symptoms, namely, five days previously to his admission into the hospital, and eighteen before his death.

Fever, followed by Pneumonia, with an Absence of the usual microscopic Characters of the latter Disease.—Dr. Aldridge said, that the case he was about to bring forward was one that had been under the care of Dr. Hudson, who had furnished him with the following history of the case:

J. P., æt. 18, a well made, and previously healthy lad, was admitted into the Navan Fever Hospital, on the 18th November, on the fourth day of fever. The disease was very mild, not requiring any active medical treatment, and terminated by crisis on the ninth day. He convalesced satisfactorily till the 1st instant, when he relapsed. On his relapse, cough came on, without expectoration. The breathing became hurried (36), and the pulse very rapid and small (130); tongue brown and dry.

On the 3rd, enlargement of the spleen was detected by percussion over the angles of the lower ribs. On this and the two following days he had epistaxis to a copious amount.

On percussion the left side of the chest was dull to the summit, and the respiratory murmur was feeble and interrupted, both inspiration and expiration being attended with sibilant râles. It was remarked that the sounds of the heart were heard over the upper part of the left side, anteriorly and posteriorly.

The treatment pursued from the 1st to the 6th of December consisted in the application of leeches, the use of tartar emetic in small doses, dry-cupping the side over the spleen, and lastly in an attempt to affect the patient rapidly by mercury. This did not succeed, and he died during the night of the 6th.

Examination of the Body thirty Hours after Death.—The left lung, with the exception of the apex anteriorly, was dense, heavy, and of a dark violet colour externally; the lower lobe was red and friable, and on closely examining its section, it appeared to be studded with extremely minute granules. This appearance could not be detected in the upper lobe, which was much congested, but not friable.

The right lung was healthy, as was also the liver. The spleen was very much enlarged, weighing two pounds fourteen ounces; its colour dark purple, covered in portions with shreds of lymph(?), and containing deposits of a cheesy-looking matter. The mucous follicles of the ileum were enlarged and ulcerated. The mesenteric glands were somewhat enlarged, dark-coloured, and congested.

Dr. Aldridge then produced a portion of the lung of this patient, which he stated to present the ordinary characters of red hepatization; it did not crepitate, and it sunk in water. When a lung which had been affected with hepatization was examined under the microscope, certain appearances were presented, which have been similarly described by all histological writers. Upon placing a piece of such a lung under the microscope, a dark, mulberry-coloured granule might be seen, easily distinguishable from every other object in the field of vision. These mulberry-coloured granules or masses were known by the name of "exudation masses;" and Vogel and Lebert, in their works on Pathological Anatomy, had described them similarly. These appearances were likewise found in other organs, and, by comparing them with blood globules, it was ascertained that the exudation masses were many times larger. Now, the most remarkable feature of the present case was, that not one of the exudation masses could be detected, although the lung presented the general characters of pneumonia viz., not crepitating, sinking in water, and allowing a frothy serum to issue from it when cut into; in fact, exhibiting all the anatomical characters of an advanced state of hepatization.

The section of the lung presented a number of small specks, which, when examined under the microscope, presented appearances identical with those represented in Vogel's Pathological Anatomy (Plate III. fig. 13), as occurring in a case of red hepatization of the lung; they were destitute of nuclei, and were the same as the minute bodies described by Lebert, and termed by him "the corpuscles of tubercle," supposing them to be incipient tubercles. The matter which becomes effused upon the intestines in cases of typhus fever presents exactly the same appearance as these corpuscles.

Fracture of the Patella; Subsequent Laceration of soft Parts.—Dr. Croker King detailed the following case, and exhibited a cast of the limb:

The early history of the case I am about to submit for your consideration does not present any features of peculiar or uncommon interest, being simply one of transverse fracture of the patella produced by muscular contraction.

A gentleman, the subject of the accident, was tripped by the rope of a canal boat, and ineffectually endeavouring to regain his feet, he fell to the ground, from which he was unable to rise without assistance: this occurred on the 29th of September, 1846.

On examination, a fortnight after the receipt of the injury, a transverse fracture of the right patella above its centre was apparent:

the fragments were separated about three-fourths of an inch. The injury was treated in the usual manner ; coaptation of the fragments was accurately maintained, but bony union did not take place.

On the 2nd of March, 1847, five months from the receipt of the accident, the limb was in the following condition : The fragments had become separated to the extent of half an inch. The motions of the knee-joint were still considerably restricted, though it could be slightly bent. The patient could walk tolerably well without the assistance even of a stick. The joint measured thirteen inches and a half in circumference, the tape being carried round the joint at the seat of fracture.

On the following morning I received a hurried summons to visit this gentleman, who resided some distance from town. On my arrival I was informed that on the previous evening (while crossing the room) the knee had suddenly bent under him,—that he suffered a severe shock,—was sensible of something having given way,—and that the knee had burst and bled profusely.

On examination an immense gash presented itself ; it ran across the front of the joint, corresponding to the interval between the fragments, which were now separated at least one inch and a quarter. The wound was half an inch wide and seven inches long, and consequently exceeded in extent half the circumference of the limb. It was occupied by coagula of blood, which had become hard and dry, fourteen hours having elapsed from the receipt of the injury.

I certainly felt much alarm for the safety of the limb on inspecting this formidable wound, as I did not see how the joint could have escaped being laid open. It was evidently the most judicious plan not in any way to disturb the dried coagula. An attempt was made to approximate the edges of the wound. Such was found impracticable, as the skin was adherent to the separated fragments of the patella. The limb was placed on a hollow splint, and the integuments supported by broad strips of adhesive plaster, to prevent the further retraction of the edges of the wound, and the entire was covered with light dressing.

In a few days severe constitutional disturbance supervened ; the tongue became furred ; the pulse beat hard and frequent ; and suppuration was freely established. On pressing the lower fragment *it yielded*, and a copious discharge of purulent matter issued from the centre of the wound, and from the angles a transparent fluid, presenting the appearance of synovia : the fever quickly assumed a hectic character.

A deep-seated abscess now formed on the inside of the limb, extending upwards for at least eight inches. The patient's countenance was expressive of much distress. The nights were passed with little sleep ; and notwithstanding the exhibition of three grains of solid opium on the previous evening, the patient had enjoyed little rest, being constantly disturbed by pain and severe spasms extending up the limb. The pulse had risen to 120 ; the tongue was

thickly coated, and the patient rapidly emaciating. There were, in addition, diarrhœa with bloody discharges, cutting pains in the abdomen, and night perspirations ;—in fact the case was altogether as unpromising as it well could be, and the question of amputation as the only probable means of saving the patient's life of course suggested itself : however, the liberation of the contents of this extensive abscess was first determined on. I made an incision of an inch and a half long, four inches above the joint, and gave exit to ten ounces of most abominably fetid pus, mixed with clots of blood and sulphuretted hydrogen gas, which bubbled up through the matter; in fact just such a discharge as we see in a suppurating hematocele. On the following day, the matter having gravitated in considerable quantity and accumulated in the vicinity of the knee, I passed a director through the wound downwards to the most depending position, and, cutting on its extremity, thus made a counter opening. This great sinus being thus completely emptied, its walls were carefully and in the most accurate manner approximated by means of a circular bandage and well-adjusted compresses.

On visiting the patient on the following day, the change which had taken place in his general appearance was not a little remarkable. The haggard and fretted look had been replaced by a joyous expression. On inquiring how he felt, he replied, " gaily ;" he had, in fact, slept soundly ; experienced no pain ; the pulse had fallen to 80 ; the diarrhœa and night perspirations had ceased, and never returned ; and, what certainly surprised me, the walls of the sinus had become adherent at every point ; there was not a single drop of discharge from the incisions, nor was there the slightest tension.

From this time the case progressed most favourably ; the amount of discharge from the wound, which was a little tedious in healing, daily diminished, and cicatrization was complete on the 4th of April, thirty-three days from the occurrence of the injury.

The cast which I exhibit was taken seven months subsequently. You observe a great transverse cicatrix corresponding to the wound, and two smaller perpendicular cicatrices marking the site of the incisions. The fragments are at present two inches apart, and the external condyle of the femur is to be plainly seen and felt in the interval, apparently having no other covering than the integuments; and you may perceive that the tranverse cicatrix runs *immediately* above the lower fragment.

The separation and the apparent total absence of ligamentous union between the fragments imperatively demanded some mechanical support to prevent a second yielding of the limb. I was enabled to obtain a very efficient apparatus from Mr. Millikin. It consists of sole leather so prepared as to mould itself accurately on the irregularities of the joint. This gives complete support, and the gentleman is able to walk about without any other mechanical assistance.

I considered the case as worthy of the notice of the Society from the rarity of the injury, as I have been able to find only *one* similar

case on record, which, however, differs from the one under consideration in the result, as the removal of the limb was necessary. It is noticed in the second volume of Bell's Operative Surgery, p. 204, in the following manner: "I have seen a very terrible accident follow the imperfect cure of the fractured patella. The bone had united by ligament, and this ligament had incorporated with the skin in such a manner that it lost much of its pliancy. The poor man was carrying a burden and fell backward, the knee sunk under him, and the whole forepart of the joint was laid open by laceration. The case terminated in amputation of the limb."

The sudden remission of the severe constitutional symptoms in this case was as remarkable as it was unexpected. I adduce it as a singular feature, and as a circumstance so unusual, that I question how far the happy result of this case should influence our prognosis or decision in a similar injury.

Acute Necrosis of the Tibia.—Dr. Hutton said that the specimen he was about to lay before the Society exhibited remarkable results of morbid action occurring, within a very short space of time, in a case of diffuse inflammation. The subject from whom the specimen had been procured was a girl aged about fourteen years, who was admitted into the Richmond Hospital on the 21st of August last. Two or three days previously she had been first seized with sudden and severe pain in the left leg, extending throughout the whole length of the tibia. This was attended with high fever. On her admission into hospital, the left limb was swollen from the knee to the ankle; it was of a deep red colour, and presented distinct fluctuation. The attendant fever was of the irritative character, marked by great anxiety, quick, weak pulse, hot and moist skin, and hurried breathing. Free incisions were immediately made down to the surface of the bone, and a quantity of matter discharged. This was followed by temporary relief; the swelling of the limb subsided to a certain extent, the redness diminished, and the fever became mitigated. But in two or three days a change for the worse took place; the knee and lower part of the thigh became swollen and very painful, and the fever again increased; matter formed in the knee-joint, and she was seized with diarrhœa, which soon passed into dysentery, and the patient finally died from exhaustion on the 16th of September, the twenty-sixth day after her admission into the hospital.

Autopsy.—The rectum and sigmoid flexure of the colon were found in a state of ulceration; but the condition of the tibia, in which bone the disease originated, formed the most interesting part of the examination, for it was found that the articulations, both of the ankle and knee, had, in this brief period (twenty-eight days), become affected with a large amount of disease. Both these joints contained a thick, purulent matter, and their cartilages were almost completely destroyed by ulceration, that of the knee-joint less extensively. There were likewise found extensive abscesses between the muscles of the leg and thigh. The tibia was covered at its lower

part with a layer of new bone, perfectly continuous with the epiphysis of the old one. The new osseous layer passed up the limb to a considerable extent, covering a large portion of the surface of the original bone, which had, until the patient's death, evidently retained its vitality, and was *closely* connected with the new layer. A considerable portion of the bone, at its upper part, had, on the contrary, become entirely necrosed. Upon making a longitudinal section of the bone, the medullary membrane, at the lower part, corresponding to that portion of the bone which had retained its vitality, was red and highly vascular, and the medullary cavity was filled with lymph; whilst, at the upper and completely necrosed part, this membrane presented no appearance of vascularity, and the medullary cavity was filled with unorganized lymph and purulent matter. In one part of the tibia a very thin lamina of dead bone was interposed between the layer of new bone and the living portion of the original bone. This may have been the case to a greater extent than was apparent, for it may have occurred that where the new layer had become intimately adherent to the original bone, a thin lamina of diseased bone may have been previously absorbed, and so admitted of this close connexion. On the whole the case was interesting, as showing that in the short period of twenty-eight days ulceration of the articular cartilages may take place to a great extent; and also that necrosis, with the reparatory process which usually attends it, will sometimes advance with remarkable rapidity in cases of diffuse inflammation and phlebitis.—*Museum, Richmond Hospital.*

Fracture of the Spine.—Dr. Mac Donnell stated, that the preparation he had to lay before the Society was a portion of the spine of a young soldier, who in the month of June last fell from a considerable height. He was brought into the Richmond Hospital early in the morning after the occurrence of the accident, complaining of severe pain in the lower part of the dorsal region upon making the slightest movement. He was deprived of the power of moving the lower extremities, and sensation was destroyed from the knees downwards. Upon examining the back, there was found a considerable projection of the spinous process of one of the last dorsal vertebræ. There was retention of urine, and the power of the sphincter ani was entirely lost. In the course of a short time after admission, the pain and inflammatory symptoms, which followed the receipt of the injury, began to subside; his system was brought under the influence of mercury, and his condition seemed to improve. A remarkable change also took place in the relative positions of the displaced parts, the projecting spinous process having fallen very much into its natural position, so as to render it difficult (had not the fact been well ascertained at an earlier period of the case) to believe that there had been a fracture at all. Upon moving the man in a cautious manner, with a view to examine the spine, it was found, that with any species of motion the injured

parts were made to undergo, there was not the slightest crepitus to be detected. No doubt, however, could exist as to the nature of the injury, and it was therefore confidently anticipated, that at the end of six or eight weeks the case would terminate fatally. This opinion was strengthened by observing, that the patient rapidly lost flesh, had a very pallid countenance, and that a large bed-sore had formed on his sacrum, with every other appearance suggestive of the probability that he would sink and die about the above mentioned period. But although the progress of the case up to this moment indicated such a termination, an unusual improvement now commenced to show itself, for at this time the man gradually rallied to a certain extent, so that for about six or eight weeks more there was a progressive amendment of his general condition. The pallor of his countenance diminished, he recovered some flesh, and the bed-sore that had formed over the sacrum assumed a more healthy look, and began to close, and for two months from this amendment taking place the appearance of rally was not to be mistaken. He had recovered some slight power of motion in his limbs, and about three months after the accident he was able to move the toes a little. When the bowl of a heated spoon was placed on the sole of the foot, the patient perceived the heat which it imparted, although the general sensibility was lost from the knees downwards. At the same time he recovered some power over the bladder and rectum. However, about four months after the occurrence of the accident, he began once more to lose ground, his face resumed its pallor, his body slowly wasted, he lost his appetite, and the bed-sores reappeared in numbers. In fact, wherever the weight of the limbs or body rested, bed-sores soon formed. An ill-marked hectic fever, unattended with perspirations, slowly set in, and he lingered for about two months longer, when at last death ended his sufferings, the entire duration of the case occupying a period of six months.

Autopsy.—Upon examination after death, it was discovered that a fracture running nearly transversely through the last dorsal vertebra had taken place. The lower fragment was displaced backwards, but to a much less extent than it had been immediately after the occurrence of the accident, and the lower part of the spine was to a certain extent rotated upon the upper. Upon opening the spinal canal, it was found that the spinal marrow was nearly cut through at the part corresponding to the fracture, and softened. The bladder was very much contracted, and presented the anatomical characters of chronic inflammation. It was also slightly thickened, and there lay within it a small calculus composed of the ammoniaco-magnesian phosphate. This calculus, the size of a kidney-bean, was found lying on the neck of the bladder, and had been unquestionably formed during the progress of the case.—*Museum, Richmond Hospital.*

Typhoid Pneumonia.—Dr. Gordon said, the preparation he was about to exhibit derived its chief interest from being an example of

the mode in which the present epidemic (1847) had in a great number of cases proved fatal. A young man, twenty-two years of age, was seized on December 7 with the usual symptoms which precede an attack of the influenza at present epidemic. He was able to continue working at his trade until the 11th, when he was admitted into the Hardwicke Hospital. He had then slight fever, with a sense of great weight at the epigastrium; slight frontal headach and coryza; pulse about 100.

These symptoms continued during Saturday and Sunday. On Monday a remarkable degree of restlessness was observable, and he had a frequent short cough, which came on in paroxysms, and again subsided: he complained of slight pain in his right side. On examining his chest, it was found to be perfectly resonant, both anteriorly and posteriorly, and the only abnormal sound was a slight sonorous râle, which was audible chiefly on the left side. About six hours after this examination was made, he was suddenly seized with weakness, and total prostration of all the vital powers, so as to require the free exhibition of stimuli during that evening.

On the following morning his features were sunk and collapsed; he had a sharp, harassing cough, with but little expectoration; his pulse was 120, small and weak; his skin hot, but his lips were blue, and his extremities becoming cold. On examining the chest, it was found that the upper third of the right side sounded dull on percussion, and that, corresponding to the extent of dulness, there was distinct bronchial respiration and bronchophony; the lower part of the right, and the entire of the left side were perfectly resonant; the respiratory murmur through the left side was natural, but through the lower part of the right side it was puerile.

December 15.—It was found that the dulness was extending downwards over the right side, and bronchial respiration and bronchophony were now audible over almost the entire of this side; the vesicular murmur being audible only in the most inferior part of the lung. He complained of a constant darting pain or stitch in this side, but there was no frottement to be heard. The respiratory murmur through the left side had become puerile, and the sound on percussion loud. The patient had made no attempt to rally from the state of collapse; he was even more sunk, and the act of sitting up in bed, that the chest might be examined posteriorly, nearly produced fainting. He died in the course of the following day, the physical signs not having undergone any change. The *post mortem* examination showed that the right lung was solid; with the exception of its most inferior portion, it was found to be in the state of red hepatization, the second stage of pneumonia of Laennec. It sank in water, yet, though apparently firm, it was very easily broken down. There were also found the anatomical characters of pleuritis. Soft, tenacious lymph was extensively effused over the pulmonary pleura.

Dr. Gordon looked upon this case as an example of typhoid

pneumonia, which was at the present moment very prevalent in this city. He was informed of three similar cases which had occurred in private practice, and proved fatal within the short space of thirty-six hours. He had under his care in hospital, at the present time, five cases of the disease, wich were all marked by the suddenness of the attack, and the prostration of the system which immediately ensued.

Dr. Gordon said, that we were acquainted with two forms of typhoid pneumonia, which had been epidemic in this country. The first, of which the present case was an example, had been prevalent at different periods since the year 1833, and had been well described by Dr. Stokes, Dr. Hudson, and others. This was the form which was so likely to supervene on typhus fever, erysipelas, &c. &c. The second was first noticed in this city in the year 1841, and its anatomical characters had been brought under the consideration of the Society by Drs. Corrigan and Stokes.

Dr. Gordon remarked in conclusion, that the important features in the present case were:

1st. The suddenness of the attack of pneumonia.

2nd. The complete and immediate prostration with which it was accompanied.

3rd. The rapidity with which bronchial respiration and bronchophony became audible without any previous crepitus, *i. e.* the rapidity with which the lung became solidified, without having passed through the usual premonitory stage of effusion into the air vesicles; for it is to be observed, that not merely was there no crepitus before bronchial respiration and bronchophony were audible at the apex of the lung, but that, in conjunction with the latter signs, there was puerile respiration, and no crepitus audible in the centre of the lung, to which portion the bronchial respiration and bronchophony had on the following day extended.

4th. It was remarkable, that the signs of solidification should commence in the apex of the lung, and from thence proceed downwards, contrary to what is observed in the ordinary forms of pneumonia, and inversely to what we meet in the typhoid form of bronchitis, where the lower portion of the lung is that principally affected. And lastly, the existence of the anatomical characters of pleuritis, though during life there were no physical signs by which it could have been indicated.

Encephaloid Tumour in the Epigastric Region.—Dr. Banks detailed the history of this case (so far as it had been ascertained while under his care in hospital). On the 14th of December, a woman named Harriet Heath, aged fifty-four years, was admitted into the Hardwicke Fever Hospital, labouring under all the symptoms of suffocative catarrh. The face was blue and congested; the difficulty of breathing extreme; and she evidently seemed in a dying state. All over the chest there was evidence of effusion into the bronchial tubes. She stated that for about two years she

had suffered from a severe cough, and for the last six months was sensible of the existence of a tumour in the epigastric region. In this region a pulsating tumour was discovered midway between the xiphoid cartilage and umbilicus, of the size and shape of half an orange, and immovable, but it was evident that the pulsations of the aorta were communicated to it, and raised it forwards with each impulse of the heart. On the day after admission she seemed somewhat better, but towards evening she began to sink, and died at 5, P.M., on the 17th.

Autopsy.—The lungs presented the usual anatomical characters of suffocative catarrh. Upon opening the abdomen a tumour as large as an orange was found closely adherent to the under surface of the left lobe of the liver. It was situated between the layers of the lesser omentum, but was invested with a distinct capsule. It projected considerably beyond the free margin of the liver. It adhered closely to the left lobe, which was deeply indented by its pressure. From the right portion of its circumference a dense fibrous pedicle passed towards the horizontal fissure, in front of the biliary ducts and hepatic vessels; the surface of the tumour was covered with varicose and tortuous veins; and a section of it exhibited the usual anatomical appearances of cephaloma; the liver itself presented an example of cirrhosis, and the spleen was enlarged. The remainder of the abdominal viscera were sound, nor was there a trace of encephaloid disease in any of the organs, either of the chest or abdomen.

The early history of the patient was obscure, owing to her having been brought into hospital in a dying state; during life, however, the tumour did not give the idea of an aneurism, for there was no expansile or diastolic pulsation or *bruit;* the pulsation was evidently communicated to it from the aorta.

Chronic Ulceration of the Stomach.—Dr. King laid before the Society a stomach taken from a woman who came under his observation about eight or nine months previously. He mentioned that at the time he first saw her the principal symptoms complained of were obstinate pyrosis; occasional, but not severe pain in the epigastric region; general emaciation, and obstinate constipation of the bowels. She likewise appeared to be in a state of continual salivation. Various modes of treatment were successively adopted, but he could not say with any marked benefit. While in this state she was admitted into hospital, and appeared to improve for about a fortnight, but was then attacked with ascites and anasarca. During the progress of the treatment for the anasarca the pyrosis subsided, and subsequently both the anasarca and the ascites yielded to treatment, and she appeared to be improving in her general health. She left the hospital and went to the country much relieved, and he lost sight of her for the space of several months. Upon Tuesday last, however, she called upon him, and informed him that the pyrosis had returned, accompanied with frequent vomitings of a thin, transparent fluid. She experienced a strong sense of nausea after eating,

and felt greatly relieved whenever this thin fluid discharge took place from the stomach. On the Thursday following, shortly after having complained of the same sensation of nausea, followed by tinnitus aurium, she threw up a small quantity of blood, and died in the course of ten minutes.

Autopsy.—Upon laying open the cavity of the abdomen he found the stomach in a state of enormous distention, and exhibiting that peculiar appearance called "the hour-glass contraction." Upon cutting into it, it was found to contain a large quantity of coagulated blood. On the posterior wall of the organ there was discovered a circular ulcer larger than a crown-piece, which had destroyed all the tunics of the stomach; but the aperture thus formed had been closed by the pancreas, which was intimately adherent to the circumference of the ulcer. In the centre of that portion of the pancreas which thus formed the bottom of the ulcer, there was seen an opening formed by ulceration in the splenic artery. Upon a former occasion, Dr. Law had exhibited a similar specimen.

Pott's Fracture.—Dr. Robert W. Smith exhibited a remarkable specimen of Pott's fracture, taken from the body of a man, æt. 70, who had lately died in the hospital of the South Union Poor House. The injury had been sustained forty years before the period of his death, and the preparation exhibited in the most striking manner all the important characteristic signs of fracture of the lower end of the fibula, with displacement of the foot outwards, viz.: the change in the point of incidence of the axis of the leg on the foot; the displacement of the foot outwards; the rotation of the foot upon its axis; the increase of the space between the two malleoli; the prominence of the tibia at the inner side of the leg; the obtuse salient angle opposite the inner malleolus, and the re-entrant obtuse angle at the outer part of the leg, corresponding to the situation of the fracture of the fibula. Were the axis of the leg in this instance prolonged downwards, it would pass altogether internal to the astragalus. The upper surface of the astragalus was directed inwards, and the sole of the foot looked outwards. The lower extremity of the internal malleolus had a truncated appearance, its diameter from before backwards was greatly increased, and its articular surface was no longer in contact with the internal surface of the astragalus, which was now directed downwards. The tendon of the tibialis posticus, and the calcaneo-scaphoid ligament, were of immense strength and thickness, and the former was three-quarters of an inch in breadth, where it wound round the lower end of the tibia, the inferior third of which bone presented a remarkable curve, the convexity of which was directed inwards. The tibia, besides being dislocated inwards, was also displaced forwards, to such an extent as to rest by the anterior half of its lower surface upon the neck of the astragalus, and to touch by its anterior margin the posterior edge of the navicular bone. The external articular surface of the astragalus, which had now become the superior, was enlarged, flattened, and covered with an ivory deposition, which was grooved in the line

of flexion. The malleolar surface of the fibula had undergone similar alterations. The fracture of the fibula had not united by bone, the fragments were connected to each other merely by ligamentous fibres, but the upper extremity of the lower fragment, which had fallen in towards the tibia, had formed for itself in that bone a circular cavity, in which it was retained by a capsular ligament; an imperfect ball and socket joint was thus formed. The individual who was the subject of the injury, walked upon the inner edge of the foot, the tendon of the tibialis posticus and the calcaneo-scaphoid ligament upon the inner, and the external malleolar surface (now directed upwards) of the astragalus upon the outer side, supporting the weight of the body.

Congenital Malformation of the Rectum.—Dr. Mayne communicated the particulars of a case of congenital malformation, which had been relieved by operation, and the subject of which had subsequently died from another cause. The case occurred in the hospital of the South Dublin Union, under the care of the Surgeon, Mr. Shannon, to whom Dr. Mayne was indebted for the opportunity of laying the preparation before the Society. The subject, a male child, was born in the hospital, and no malformation was suspected until the morning after its birth, when its mother reported that it had been very restless, would not suck, had vomited whatever liquids it had swallowed, and had no discharge from the bowels. The belly was now tympanitic; the anus appeared natural, but Dr. Shannon having passed in, successively, a catheter and a probe, found that each was arrested at a point about two inches above the outlet; he then introduced a speculum, by which he was enabled to see the obstruction, and succeeded in reaching it with his finger; there was no feeling of distension from above, and consequently the prognosis was very unfavourable; but as the child was nearly moribund, it was decided in consultation to give it the chance (slight as it was) that an operation afforded. The speculum (a silver tube) was passed up to the obstruction, and then a narrow, sharp, French bistoury was guided upwards in the axis of the gut, so as to penetrate the obstruction; on withdrawing the bistoury, a copious discharge of meconium followed, and all the symptoms of distress were relieved; the abdomen subsided, the stomach ceased to be irritable, and so far the operation was attended with success. But the mother proved in this instance a bad nurse, her milk failed, and it became necessary to resort to artificial nutriment, which, however, disagreed with the stomach; the vomiting returned, and the child died on the tenth day.

The examination of the body (now on the table) shows that the lower part of the rectum, for about an inch and a half from the anus, is perfect; the obstruction was not produced by a transvere septum, but by a stricture involving all the tissues; the intestine was considerably dilated above the obstruction.

The operation had here been so far successful, that the stricture was perforated without transfixing the walls of the intestine, or

injuring any of the neighbouring parts; but inspection of the rectum *in situ* shows that the slightest deviation to either side would have caused the point of the instrument to pierce the parietes of the gut. The specimen shows the necessity, in such an operation, of remembering the nearly direct course of the intestine in the recently born infant, and of guiding the perforating instrument as nearly as possible in its axis.

Laceration of the Stomach.—Dr. Hutton exhibited a specimen of laceration of the stomach, and gave the following history of the case.

M.D., aged eight years, was admitted into the Richmond Hospital in August, for strumous ophthalmia. Both corneæ were opaque and studded with numerous very minute ulcers; the child had rather a pale, scrofulous aspect, and was reported by her parents to be liable to indigestion, but in other respects she seemed to be in tolerable health. She was directed to take three grains of the bromide of potassium, twice or thrice in the day; blisters were applied from time to time to the temples and behind the ears, and eye-drops of different kinds employed. Under this treatment she seemed to improve considerably. Her appetite, general condition, and animal spirits became very good, and the cornea of one eye had nearly resumed its healthy appearance. It was observed that she had a remarkable desire for the fat of meat, and would eat with avidity the portions which other patients left. She was regular in her bowels, and was never heard to complain of pain in the stomach. The treatment was continued with little intermission until the 14th of November, 1846, when, in the evening, she complained of nausea. On the succeeding day she vomited at intervals, for some hours; this ceased early in the afternoon of the same day. The resident pupil reported that she had no pain or tenderness of the abdomen, but complained of headach; her pulse was quick and easily compressed. On the morning of the 16th she was evidently sinking, but still complained only of pain in her head; the extremities were cold, and her pulse scarcely perceptible. In the evening she became comatose, and died on the following morning.

In ten hours after death the autopsy was carefully made, and revealed the following extraordinary appearances. There were the usual general evidences of peritonitis, effusion of lymph, &c. The stomach lay collapsed. It was removed with great care, and accurately examined. At its cardiac extremity there was a very large rent, four inches in extent, and there were two or three small oval openings, about a quarter of an inch in diameter, in the vicinity of the rent. On examining the coats of the stomach, they were found extremely attenuated at its cardiac extremity, thus accounting for the extent to which this organ had been torn. The serous membrane, to a considerable extent in the neighbourhood of the laceration, was almost laid bare, the mucous membrane having entirely disappeared, leaving only the serous, with a few muscular fibres. The pyloric end of the stomach contrasted remarkably with the attenuated cardiac extremity, for there the coats were unusually

thick. Very little appearance of inflammation was manifest on the internal surface; there was scarcely any vascularity, nor was the mucous membrane of the pyloric extremity at all softened. In the ileum there were two or three attenuated patches, but no ulceration. This absorption of the inner coats of the stomach, without inflammation, was, Dr. Hutton observed, somewhat analogous to the condition described by authors, as the result of digestion after death, by the organ itself, but the subjects of such cases have generally been known to have taken a full meal a short time before a sudden death. In the present case, the laceration seems to have taken place in the efforts of vomiting, and the result was probably facilitated by the hypertrophied state of the muscular coat at the pyloric extremity. The existence of extensive peritonitis indicated that the laceration occurred some time before death. From the period of the first occurrence of nausea and vomiting, to her death, three days elapsed.

Congenital Malformation of the Tarsus.—Mr. Robert W. Smith brought before the notice of the Society a preparation of the skeleton of the foot, in which the os calcis and os naviculare formed but one bone. The external extremity of the navicular bone, prolonged outwards and backwards, was united to the upper portion of the cuboidal surface of the os calcis; the anterior inferior aspect of this prolonged portion presented an articulating surface, which was adapted to the posterior part of the superior surface of the cuboid bone; the os naviculare, which thus possessed in front four articulating facettes, was also joined to the os calcis beneath the head of the astragalus. Mr. Smith drew the attention of the meeting to the embarrassment which such a condition of the parts as that which he had just described might cause to the surgeon, during the performance of Chopart's operation. A specimen of this malformation has been delineated by Cruveilhier; it was accidentally discovered by M. Fischer, while practising the partial amputation of the foot, upon the dead subject, according to the method of Chopart.

Ossific Deposit in the false Membrane of Pericarditis.—Dr. Banks presented a heart removed from the body of a man who had died in the Hardwicke Fever Hospital, on the 27th of December, the history of whose case was as follows. A patient named Martin Meehan, æt. sixty years, was admitted into the hospital on the 4th of last December, suffering from bronchitis, and pleuro-pneumonia of an asthenic character. The case proceeded favourably for some time; the pulse became quiet, and the tongue, which had been rough, brown, and dry, began to clean. Upon the 23rd, the improvement in the condition of the patient was such, that he was allowed to get up. On going to bed, however, early in the evening, he was seized with a rigor which soon went off, but recurred upon the following day; yet his pulse was only 74, and he had neither headach nor confusion of ideas, and declared himself easy and free from suffering. On the 25th he had another rigor, his tongue again became

rough and brown, and about 12 o'clock at night he suddenly lost the power of speech, and the right leg and thigh were deprived of sensation, and the power of voluntary motion. On the 26th there was no change in his condition ; he lay in a comatose state, but the pupils responded to the stimulus of light. The pulse was at this time 130 ; at 10 o'clock, P. M., the pupils became contracted to the size of pin holes, the pulse increased to 140, respiration became extremely laboured and loud, and he died at 7 o'clock on the morning of the 27th December.

Autopsy. Head.—The dura-mater presented a slight yellowish tinge on its outer surface. Flakes of lymph, of a light yellow colour, were seen upon the surface of each hemisphere of the brain, and in many places between the convolutions. Some lymph, and about four ounces of fluid, were discovered at the base of the brain.

Thorax.—The lungs were emphysematous, and the right costal pleura adhered so firmly to the pulmonary layer of the membrane throughout its whole extent, that the lung could not be removed without separating the pleura from the ribs. In the false membrane which united the two layers of the pleura, osseous matter had been formed. The rings of the trachea, and many of those composing the larger bronchial tubes, were found converted into bone.

The pericardium was almost everywhere closely adherent to the heart ; and a large plate of bone, fully two inches square, had been formed in the false membrane, which constituted the uniting medium, and which had evidently been the result of an attack of pericarditis, many years previously to the death of the patient. The osseous plate above mentioned was upon the surface of the right ventricle. The heart was large, but pale, soft, and flabby ; its muscular structure was greasy, and wherever the pericardium was not adherent, fat of a pale, unhealthy aspect had been deposited copiously upon the surface of the organ. The aorta, with the exception of a few spots of atheromatous deposit, was sound, and the lining membrane of the heart, and its valves, were free from disease. This Dr. Banks considered to be a remarkable circumstance, taking into account the marked tendency which existed in this case, to the formation and deposition of osseous matter.

Dr. Banks having referred to the remarkable cases of ossification of the heart and pericardium, recorded by Mr. Robert W. Smith in the ninth volume of the Dublin Journal, and to the tendency to death by apoplexy in such cases, concluded by quoting the following observations, made by Mr. Smith, in the paper to which he had just referred : " A more interesting question for discussion, and one at which I can only glance, presents itself, however, on reflecting upon these cases, viz. : what is the relative influence of the auricles, the ventricles, and the arteries, upon the due performance of the circulation? Such cases as those recorded by Burns, as well as that of M'Keon, which came under my own observation, certainly tend to undervalue very much the aid which the circulation receives from the ventricles ; they show that the ventricles may be ossified, hard as the skull, and rigid as stone, and yet the circulation be

carried on. The auricles pour their blood into these rigid cavities, which, being in a great measure incapable of contraction, cannot empty themselves, and the blood remains, or tends to regurgitate, until a fresh impulse from the auricles sends a portion of it into the arteries, which then carry on the circulation by their own reaction. A full consideration, however, of this interesting question, would lead far beyond the limits to which I must at present confine myself; to do it justice, it would be necessary to take a review of the circulation in the lower classes of animals, in monsters, where the heart or some of its cavities are wanting, and to consider many morbid conditions of the circulating system.

"I may, however, remark, that if the history of these cases shows, that the circulation may be carried on with ossified ventricles, it also demonstrates that the vascular actions are extremely precarious, and liable to be disturbed, or altogether stopped, by a very trivial cause; as Burns has remarked, 'the action of such a heart is unharmonious and easily deranged, it can only act efficiently while the circulation remains undisturbed.'

"The case detailed by Mr. Adams fully exemplifies the truth of this remark. Two men, each apparently about 60, had been exposed for some time to the fumes of charcoal; they were brought into Sir Patrick Dun's Hospital, in a similar state of exhaustion; their bodies were warm, but respiration had ceased for a few moments in both; by the application of the usual means, both in a short time recovered, one completely, but the other, after exhibiting signs of life for two hours, expired. On examination of his body, the viscera were found all in a natural state, except the heart, which was adherent to the pericardium and nearly encircled by a zone of bone, about three lines in thickness, and more than an inch in breadth.

"In his remarks upon this case, Mr. Adams observes, that if the three important organs, the heart, the brain, and the lungs, the 'tripod of life,' as they have been aptly denominated, be not all equally strong, at a time when animation has been accidentally suspended, the weak one cannot be roused to resume its functions. Thus, under such circumstances, what might have been supposed a simple faint has terminated in death; and I think, in the case I have just given of ossification of the pericardium, in such an altered structure was to be found the cause of death, as a man placed exactly in similar circumstances, but whose organs were sound, survived."

Disease of the Mitral Valves.—Dr. Law exhibited a heart which presented an example of contraction, to a very great degree, of the left auriculo-ventricular opening. The chief interest of the case consisted in its being one of a particular class which of late had attracted much of the attention of the Society, from their showing a necessity of retracing our steps to a certain extent, respecting the diagnosis of valvular disease of the heart; for hitherto it had been customary to believe that diseases implicating the valves of the heart were almost constantly attended with certain abnormal sounds.

Dr. Law stated that Mr. O'Ferrall, last year or the year before,

had drawn the attention of the profession to some cases that had fallen under his observation, of extensive disease of the mitral valves, where no abnormal sound could be detected during life; and it was the opinion of that gentleman, that when the auriculo-ventricular opening became narrowed to a great degree, the sounds ceased to be distinguishable. This opinion received some confirmation from another case that Dr. Law had himself brought before the Pathological Society several years since. He considered the present case worthy of attention, from the circumstance that it had been for a long while under his observation. Its history was briefly as follows. The patient, a female, presented herself for admission into Sir Patrick Dun's Hospital, not complaining of any of the symptoms of cardiac disease, but for a loss of appetite, and general derangement of the digestive system. While under his care in hospital she suffered from palpitation of the heart, but on making an examination with a view to ascertain whether any disease of that organ existed, Dr. Law could detect nothing more than a strong impulse over the cardiac region, unaccompanied by any abnormal sound whatever, either in the situation of the aortic or mitral valves. This impulse was the only circumstance that attracted his notice, until three weeks before the death of the patient, about which period she was attacked with the prevailing influenza. From this time she began to complain of very distressing palpitation, the action of the heart became tumultuous, and the patient was obliged to sit up in bed, with her body inclined forwards.

Dr. Law now entertained a suspicion that this impulse might be caused by an aneurism of the ascending aorta, for, besides the strong action of the heart, there was a prominence of the sternum, and dulness on percussion over a greater extent than usual of the cardiac region. However, these symptoms were too obscure to warrant any decided opinion. The abdomen now began to swell, the patient complained of great tenderness in the epigastric region, and from the period of this seizure she progressively sunk.

Autopsy.—Upon laying open the thorax there was discovered effusion into the cavity of each pleura, and also into that of the pericardium. The right auricle was enormously distended with blood, and thickened, and Dr. Law was of opinion that this over-distention of the right side of the heart, existing for a long period before the patient's death, had caused the peculiar prominence of the sternum, which was so observable during life. In proceeding with the examination he was led to observe that the aorta was very much contracted, and this circumstance made him suspect that he would find disease of the mitral valve, which suspicion proved to be correct. There was not only a remarkable thickening of this valve, but a contraction to an extraordinary degree of the auriculo-ventricular opening, the margin of which was lined by a fringe of lymph; and there appeared to be an interstitial deposit in the substance of the valve. The right and left auricles, and the right ventricle, were all considerably enlarged, but the left ventricle was in a state of concentric hypertrophy.

Malignant Tumour of the Leg.—Mr. Hamilton brought under the notice of the Society, the amputated limb of a female, who had been affected with a malignant tumour of the leg. The patient, aged eighteen years, and to all appearance in rude health, was admitted about six weeks since into the Whitworth Hospital, under the care of Dr. Banks, with a tumour at the upper and outer part of the leg. From her own statement it appeared, that about three months previously to her entrance into hospital she received a fall by which she sprained her knee, and that for some time after she experienced pain at the injured part. When she came into hospital the tumour was of moderate dimensions, very smooth on the surface, and remarkably elastic, so much so as closely to simulate a fluctuation. However, there was something in the feel of the tumour repugnant to the idea of its being an abscess. Mr. Hamilton was unable to satisfy himself that there was any true fluctuation perceptible. He, therefore, contented himself with ordering the insertion of a caustic issue on the surface of the tumour, so that, if it should prove to be a strumous abscess, the matter might be conducted to the surface. While the patient was undergoing this treatment the tumour gradually decreased, and from being highly elastic began to acquire a certain degree of consistence, until finally it felt under the finger like a congeries of enlarged glands. He then began to suspect that he had to deal with a malignant tumour. Accordingly he held a consultation with his colleagues on the case, and it was agreed to make a small puncture into the tumour; but upon doing so merely a little blood flowed out. Subsequently, two more punctures were made, and on both occasions a small quantity of blood mixed with serum came away. It was then evident that the disease was of a malignant character, and that there was no other remedy for it but amputation. Previously to the performance of the operation, the tumour presented the following appearances. The upper third of the leg was considerably swollen, and the tumour, which at its outer part was large, uneven, and lobulated on its surface, completely surrounded the fibula. A number of blue veins were scattered over its surface, but there was no discoloration of the integuments. The patient suffered occasionally severe pain in the leg, and an examination of the tumour after the removal of the limb afforded a satisfactory explanation of this symptom. Her general health was unaffected. On Wednesday week amputation was performed by Mr. Hamilton. The dissection of the limb disclosed the following appearances. The integuments covering the tumour were infiltrated with serum, but in other respects were healthy. The peroneal nerve passed directly across the surface of the tumour, and was in a state of tension and flattened, which circumstance, he had no doubt, was the cause of the pain from which the patient suffered so much. When the fascia was removed, the gastrocnemius and soleus muscles were found expanded over the surface of the tumour, and extremely attenuated; they also seemed to have undergone a material alteration of structure, and one of the peroneal muscles was infiltrated with malignant matter. The tumour had a cyst of its own, occupied the posterior and upper part of the

calf of the leg, in front of the soleus and gastrocnemius muscles, and extended anteriorly beyond the fibula. Upon cutting into it it was found to possess in a high degree all the anatomical characters of medullary sarcoma; indeed nothing could present a nearer resemblance to cerebral matter than certain portions of this tumour. Other parts of it were composed of extravasated blood.

The question naturally presented itself, from whence had this disease its origin? The most usual place for a malignant tumour in this situation to arise was, undoubtedly, the head of the tibia; but, in the present case, Mr. Hamilton was certain that the head of the fibula was the point where the disease commenced. The upper third nearly of this bone was entirely destroyed. It was also worthy of remark, that the symptom of pulsation which so frequently attended tumours of this description, when situated at the upper part of the leg, was absent in the present case. Mr. Hamilton here alluded to the case of a gentleman who had a tumour of this kind, whom he attended some years since, in which the pulsation was so strong, that considerable doubt was entertained by the surgeons called to consult on the case, as to whether it was a malignant tumour or an aneurism.

Mr. Hamilton remarked in conclusion, that during the progress of the present case, he was struck by observing, that a remarkable diminution took place in the size of the tumour, which was reduced by nearly one-third of its original bulk. This was a circumstance of which no satisfactory explanation could be afforded.

Foreign Substance passed from the Intestines.—Dr. Scallan detailed the particulars of a case, in which severe dysenteric symptoms were produced by the lodgment of portions of twine in the intestinal tube. About six weeks ago he was sent for to attend a young lad, whom he found labouring under great irritation of the bowels, accompanied by general febrile symptoms. The local distress increased from day to day, and the evacuations in the course of a fortnight assumed all the characters of dysenteric discharges. Blisters, &c., failed to afford any relief, and the use of strong astringents was about being commenced, when a portion of twine was observed in one of the evacuations, and subsequently, on examining another stool, a similar piece was found. It being concluded that the lodgment of these substances in the intestines had been the cause of the irritation of the bowels, all treatment was stopped, and from the time of their having been voided, not a single dysenteric symptom occurred.

It appeared upon investigation, that the patient had been in the habit of chewing portions of twine; but from the statement which he made, it was manifest that the pieces found in the evacuations must have been swallowed at least six weeks before the occurrence of the dysenteric symptoms.

(*To be Continued.*)

MEDICAL MISCELLANY.

A Case of Foreign Body in the Windpipe. By John Popham, A. B., M.B., Physician to the Cork North Infirmary.

The subject of the present case was a little boy, named John Casey, aged 4, who was brought to the infirmary to be treated for supposed croup. His respiration was stridulous, voice hoarse and at times almost inaudible, and cough dry and hard, occurring in paroxysms, which threatened suffocation. During the fits of coughing, the inspirations assumed a peculiar character, becoming shrill and whistling, not, however, so distinctly sonorous as in hooping-cough; the expirations were without any appreciable sound. When the paroxysm ceased, the child appeared comparatively free from distress, and the sharp sound of the inspirations became less audible, but did not quite lose the sibilant character. A circumstance which early attracted notice in the case was a want of accordance between the pectoral signs and constitutional symptoms. Thus, the child suffered very little pain, complaining chiefly of soreness at the hollow of the neck from constant coughing, the tongue was clean, the deglutition not affected, there was but little thirst or heat of skin, and the pulse ranged from 96 to 102 in the intervals of cough, being slightly intermittent; the face, however, was pale, swollen, and anxious, the head thrown back, so as to extend the larynx; the jugular veins were turgid, and the child was particularly fidgety and restless. On remarking these circumstances to the mother, she stated that on the previous day the child had been seen playing with a little ring of brass,—an eyelet or stay-eye,—which he said he had swallowed, but, from his extreme youth, she did not attach much importance to the child's assertion; she admitted, however, that the piece of brass had been sought for and could not be found. She also observed that a slight cough which the child had, became suddenly and alarmingly aggravated, accompanied by a choking sensation so urgent that she took him at once to an apothecary in the neighbourhood, who told her that the child had quinsy, and administered an emetic with temporary relief. On examination of the chest, the sound on percussion was found everywhere normal. The respiratory murmur was heard distinctly in both lungs, and was not accompanied in the early stage of the case by any rhonchus; but, though perfectly vesicular all over the lungs, yet it was not as loud as is usually heard in a child of his age. There was no perceptible difference in the respiration of the right lung, as is observed to occur when a foreign body becomes impacted in the right bronchus or its subdivisions. We could thus gather only the negative evidence that the bronchi were not directly obstructed, nor the parenchyma of the lungs inflamed. The examination of the larynx was

less conclusive. It was difficult to apply the stethoscope to the short and uneven neck of the child, and he was constantly crying and shifting his position. We could, nevertheless, collect that no evidence of a moveable body existed either upon coughing or change of posture, even on inverting the child; the distress, however, produced by this position, was so great that we did not attempt to repeat it.

The diagnosis of the above case was embarrassing. We had, on the one side, the testimony of the little patient himself that he had swallowed the piece of brass, but so far dubious, that when he was pressed further, he got frightened, and denied all knowledge of it; we had also the sudden appearance of the suffocative cough and dyspnœa, and the paroxysms of great distress, alternating with intervals of comparative ease and remission of febrile symptoms; these circumstances, taken in combination with the existing physical signs, rendered the supposition of a foreign body in the windpipe extremely probable: on the other hand, cases of croup were at the time of almost daily occurrence at the infirmary, and, in the present instance, the signs of temporary or permanent pulmonary obstruction were absent. As, however, the evidence in favour of the presence of a foreign body in the air-tubes predominated,—and the child, in such an event, incurred hourly risk of suffocation, if not relieved by an operation,—it was resolved to admit him into the hospital with the view of operating upon the first emergency. On explaining, however, to the friends the probability of the operation being required, they at once demurred, and even refused to allow the little patient into the infirmary, unless a pledge was given that no operation should be performed. Under these circumstances, nothing remained but to carry out the medical treatment, explaining to the parents the risk of failure; accordingly the trachea was freely leeched, and powders of calomel and ipecacuanha were given, with the apparent effect of improving all the symptoms, except the stridulous breathing. The cough lost much of its hard character, and its exacerbations were less frequent; the expectoration became more free, the only change in the respiration being the addition of slight bronchial murmurs. 'On the twenty-first day, from the date of the severe symptoms, the child—after a night of unusual dyspnœa and spasmodic cough, while sitting up in his mother's arms, where, indeed, he had continued nearly all the time of his illness, from inability to lie in bed—brought up the piece of brass by a strong expiratory effort without cough. The little patient was the first to notice its escape. Upon examination of his chest a short time after, we found the stridulous breathing and signs of oppressed circulation gone, and the vesicular respiration decidedly louder over both lungs. In a few days all traces of irritation had disappeared, and the child in the month following passed through a severe attack of measles without any untoward result.

The piece of brass proved to be, as was suspected, one of those small rings, with a groved edge and central orifice, used by stay-

makers; it weighed three grains, and its diameter somewhat exceeded

three-tenths of an inch, no doubt greater than that of a bronchus in so young a person. Hence, and from the absence of the physical signs of obstruction of the air passages of either lung, it seems almost certain that the substance was not impacted in any of the bronchi; that it was fixed seems probable, from the absence of pain and of the signs usually denoting the motion of a foreign body in the trachea; the weight of the brass and its sharp, jagged edges would also dispose to this result, but whether it was fixed in the trachea or in one of the ventricles of the larynx we can only conjecture. The central opening in the eyelet, by affording a facility for the transit of air, certainly lessened the danger which would be incurred from a solid body of equal diameter, and to this was probably owing the feeble vesicular murmur heard equally in both lungs, as if from a cause common to both. Perhaps, also, the central orifice in the brass had some connexion with the whistling sound of the inspirations noticed above, similar to that which occurred in the case recorded by Professor Macnamara in the Dublin Hospital Reports, where a distinct musical note was produced from a perforated cherry-stone impacted transversely in a boy's larynx.

It is probable that the aggravation of the symptoms upon the night previous to the expectoration of the eyelet, was occasioned by the loosening or dislodgment of it. Certainly the happy escape of a body of dimensions so disproportionate to the opening of the glottis of a child of his age, is a lesson to us not to despair when, as in the present case, an operation, though strongly urged, will not be permitted.

Case of Rupture of the Bladder. By M. H. Stapleton, M. B., F. R. C. S. I., Surgeon to Jervis-street Hospital. Reported by Mr. R. E. Fitzgibbon.

Charles Scarlett, aged twenty-two years, unmarried, by occupation a labourer, was admitted into Jervis-street Hospital on the 30th of September, 1849.

Whilst working the Panorama at the Rotunda, on Saturday evening, the 29th inst., being in a state of intoxication, he fell about the height of twelve feet from a ladder, and said that he came upon his feet. He was brought to the hospital in a car. Upon examination by the resident pupil no injury was apparent, nor did he complain of any, with the exception of a small cut on the elbow, which being dressed, he was brought home; and the persons with him were directed to bring him next day to the hospital, should he, when sober, find that he had suffered any other injury.

On Sunday, the 30th inst., he walked from his lodgings in Britain-street to the hospital. On his admission he said that he was in great agony with pain in his belly, and that he had passed no water since before the occurrence of the accident; that his stomach had been very sick during the night and morning, having a frequent incli-

nation to vomit and also to evacuate his bowels, neither of which was he able to accomplish; he also complained of great headach and thirst. His countenance was pale and anxious; the pulse quick and feeble; the extremities cold.

The catheter was now introduced, and about two ounces of dark-coloured urine mixed with blood drawn off. He was then put to bed, when, on examination, the abdomen was found tense and extremely painful on pressure. The catheter was again introduced, and a small quantity of clear urine drawn off. A laxative enema was prescribed, as his bowels had not been opened for some days previously, and also to relieve the tenesmus, which was very troublesome. It acted satisfactorily. Twelve leeches were then ordered to be applied over the region of the bladder, and the parts to be afterwards fomented: two grains of calomel and half a grain of opium to be given every third hour.

October 1st.—He was seen by Dr. Stapleton for the first time at 9, A. M. He was then sitting up in bed, with his chin almost upon his knees, complaining of intense pain in his abdomen, which prevented him from lying down. The pulse was small and scarcely to be felt, and the extremities cold and blue, although he was enveloped in blankets, and heaters had been applied to his feet. He had refused during the night to allow the application of the fomentations, as he said the pain was increased by the slightest pressure. The catheter was introduced, and a small quantity of transparent limpid urine drawn off. He stated that on getting up to the night-chair (which he had been frequently obliged to do on account of the desire he felt to go to stool), he each time passed water. Leeches were again ordered to be applied over the region of the bladder, and after their removal the abdomen to be covered with a warm poultice. He was to take a grain of calomel and a grain of opium every second hour.

October 2nd.—He was now troubled with diarrhœa. The calomel was omitted, and a grain of opium given every second hour, the abdomen fomented with warm water and turpentine, and the poultice re-applied after each fomentation.

In the evening he was under the influence of the opium, and was able to lie down and stretch out his legs. The opium to be continued acording to the effects produced.

October 3rd.—Diarrhœa and tenesmus still urgent. Starch and opium injections were prescribed.

In the evening the diarrhœa and tenesmus still continued unabated; he could allow pressure on the abdomen, and, although in a drowsy state, complained of want of sleep. Acetate of lead and opium injections were now ordered.

October 4th.—Diarrhœa and tenesmus still unabated, and the abdomen enlarging. Complains greatly of want of sleep, and begs to have opium pills, which were given every second hour.

In the evening hiccough had been added to the other symptoms, and the pulse could not be felt in one arm. He was still able to get

up to the night-chair (obstinately refusing any assistance in bed). A blister to the epigastric region was ordered, and a mixture of camphor and sulphuric ether given occasionally.

October 5th.—Is evidently sinking rapidly, although he speaks with a firm voice and is able to get out of bed without assistance. The pulse has failed at the wrist.

The catheter was introduced at intervals, and scarcely an ounce ever came away at one time.

He died at about 3 o'clock, P. M.

The body, when examined on the morning of the 6th, presented the following appearances. The abdomen was tumid, but no sign of ecchymosis was apparent. On opening the cavity of the peritoneum a large quantity of fluid escaped. The intestines were not much distended, but were preternaturally vascular. There were a few very slight adhesions, but no glueing together of the intestines. The liver was nodulated, and presented several old adhesions on its anterior surface; the omentum was very vascular, and lay in a shrivelled mass across the upper part of the abdomen, presenting no appearance of lymph on either surface. The intestines were easily turned out (there being but few and very slight adhesions) from the pelvic cavity, which contained about a pint of a turbid fluid, having a strong ammoniacal odour.

The fluid being removed, the peritoneum was found coated thickly with lymph. The bladder did not extend above the pubis. An elastic catheter having been introduced through the urethra, air blown into the bladder was found to escape, bubble by bubble, from its upper and posterior part. The lymph being removed a transverse but rather oblique rent was found in the peritoneum of about three quarters of an inch in length, that in the bladder being of greater extent; its edges were jagged, thickened, and extremely vascular. There was no discoloration of the peritoneum in the neighbourhood of the rectum, but, on examination, the surrounding areolar substance was much inflamed.

From the appearances on dissection it was evident that nature had gone far in this case towards the accomplishment of a cure of the ruptured bladder; and I am inclined to think that had the man in the first instance drawn attention to the injury received he might have recovered. In similar cases I would be disposed to rely more upon the opiate treatment, in combination with leeching or general blood-letting, than upon the use of mercurials. I would not recommend a catheter to be left in the bladder, but would have it introduced at proper intervals, and not farther than was absolutely necessary just to enter the bladder. It should be also borne in mind that there is but little secretion of urine in acute peritonitis, and, in addition, the constant tenesmus which is always present, and might almost be said to be pathognomonic of this accident, induces the patient frequently to empty the bladder, although ruptured. In the ninth volume of the first series of this Journal there is a very able and valuable paper by Professor Harri-

son on rupture of the bladder, in which he advises tapping of the pelvic *cul de sac* through the rectum. This operation, recommended by so high an authority, has been, as far as I am aware, never yet tried, nor would I wish to give a decided opinion against it, yet I cannot avoid remarking that the effects of the accident are, in its first moments, insidious, and have proceeded to a destructive extent internally before its nature is suspected by the sufferer. Moreover the operation is not recommended by the learned professor "till the *cul de sac* is distended with fluid, coated with lymph, and well protruded towards the rectum." When such is the state of the patient I fear the operation will not be followed by the happy result he expects.

Case of Communication between the Rectum, Bladder, and left Ovary; Calculus of the left Kidney; great Enlargement of the Liver; with lateral Curvature of the Spine. By T. P. Heslop, M. D., Resident Medical Officer to the General Hospital, Birmingham.

Catherine Everall, aged 37, married, was admitted into the General Hospital, Birmingham, on the 22nd of June, 1849, under the care of Dr. Johnstone; an extremely emaciated woman, with a countenance indicative of intense suffering. She had been a patient twelve months previously in the hospital, and found so much relief that she insisted upon being brought again, though it was obviously only to die. At the former period she complained of extreme pain in the left lumbar region, and passed a large quantity of purulent urine. This latter symptom appears to have existed for several months previously. About the time of her last admission the menses disappeared, and never since recurred. Many years before, two stones were extracted from the bladder at the Shrewsbury Hospital, of which I have been unable to learn more than that they were smooth, round, and of great beauty, insomuch that they were kept for a long time as interesting curiosities by the friends of the patient. When in the hospital she appeared to labour under such marked symptoms referable to the bladder, that Dr. Johnstone directed it to be sounded, but no calculus was detected. Up to the period of her present application to the hospital, she has had great difficulty in passing urine, and endured severe pain until she succeeded. Her husband informed me that she averred she had passed air from the bladder for at least twelve months, and that it was her opinion that the air prevented the evacuation of its contents, and this expulsion of air always produced marked relief. She appears to have had the belief that the urinary and fæcal passages communicated, and was never able to account for the curious odour and appearance of the discharges from the urethra. She told her husband that her spine began to yield at the age of 14, which she attributed to over-exertion in carrying her younger brothers and sisters. She never had children, and has never had an attack of jaundice.

She suffered such extreme exhaustion from her journey (a dis-

tance of fourteen miles), that it was found impossible to make a very accurate examination of her condition. She was ordered good diet, wine, and quina with sulphuric acid. On the evening of the 25th she had an exacerbation of pain; the countenance assumed the Hippocratic character; while the strength was evidently failing fast. The pain was exclusively confined to the left posterior lumbar region, and coursed down the left iliac to the hypogastric region. These portions of the abdomen were exquisitely tender to the touch. There was a clear sound on percussion over the last-named regions, but the lumbar region was perfectly dull; here there was distinct evidence of fulness also, but somewhat undefined. The right half of the abdomen was tense and absolutely dull on percussion, extending from the ribs nearly to the crest of the ileum. The limits of this, the hepatic tumour, were easily definable both by touch and percussion. The wine was increased, but she sank during the night. She passed purulent urine up to the time of her death.

Autopsy.—Head not examined.

Thorax.—Nothing worthy of note was observable in the lungs and heart. The right pleural cavity was diminished to a remarkable degree by curvature of the spine, commencing at the dorsal vertebræ, its greatest convexity ending at the base of the thorax. The lumbar portion of the spine presented curvature, to a less degree, to the other side.

Abdomen.—On opening the abdomen the liver was seen to occupy its entire right half, sweeping below the umbilicus to the right posterior lumbar region; its posterior border deeply notched by the spine; its inferior surface strongly marked by the kidney and colon. Its consistence was much firmer than natural; it felt almost dry, and cut like brawn, its general aspect being that of a *waxy* liver, with solid fat deposit. The left kidney was fully one-half larger than its natural size. On being carefully cut open, small abscesses were found throughout its substance; and several ounces of pus came from the immensely dilated pelvis. The infundibula were loaded with calculi, accurately moulded to their form; some of these reached the calyces. The head of the ureter partook of the dilatation of the other renal passages, and was occupied by a calculus as large as a walnut, so closely impacted, that it was only after some manipulation a probe was made to pass into the pelvis of the organ. The ureter below this point was not dilated to a marked degree. On proceeding to examine the pelvic organs, a tumour about the size of an ordinary orange was seen occupying the position of the left ovary. The adhesions between this body, the rectum, and bladder, were so intimate, that all these organs were taken out together and carefully dissected. Upon opening the bladder, which was of moderate dimensions, considering the age and sex, a minute hole was noticed in the left angle of its superior fundus. The mucous membrane around was minutely granular and stained of a dark slate colour; a probe was found to pass with the greatest facility from this point into the

head of the rectum, which strongly adhered to the upper back part of the bladder. The tumour mentioned was found to be the left ovary enlarged; externally its *colour* was bright brown, its consistence obviously less than *small* ovarian tumours in general. A soft, pultaceous, half-fæcal, half-caseous-looking matter was contained within it, which was found to communicate with the rectum, or, more correctly, with the lower anterior portion of the sigmoid flexure of the colon, adherent to the tumour. This communication was evidently out of the direct course of the intestinal contents, from the presence of bands and folds in the cavity of the gut, both below and above the opening of communication. The finger *could* be passed along the bowel without passing into the abnormal communication, and *vice versâ*. The recto-ovarian did not correspond exactly with the recto-vesical opening, the latter being a little lower in the pelvis, but all were matted together. The remaining abdominal and pelvic viscera were healthy.

The morbid appearances found in the pelvis in this case are, as far as I know, unique. It is difficult to understand how this poor woman sustained life so long with such an amount of disease going on in the abdomen. Nor is it by any means easy to give a decided opinion as to the nature of the ovarian tumour. There was no evidence of tubercle or cancer, the two most common causes of abnormal communications between the various organs of the body. Perhaps the only explanation that can be offered is, that a slow process of inflammation had been for a long time silently throwing out its characteristic exudations, and gradually glueing together those organs lying nearest to the great permanent lesion of the left kidney, by a *selection* too obvious to require further mention; upon the adhesion followed the ulcerative process, and so ensued the remarkable appearances discovered after death. It is impossible to imagine that the communication between the ovary and rectum could have existed long; for although, from the peculiar anatomical character of the former, the cavities of these organs did not communicate *freely*, and the existence of a great pus-discharge from a neighbouring organ might have tended to check it, irritation must have been produced in no long time after the connexion, sufficient to cause ovarian suppuration, with pelvic abscess.

It will be observed that the account of the woman passing air, if not fæces, from the bladder, was obtained after her death from her husband. We must take such observations with caution, although these inquiries were made with scrupulous care; and in further proof of the correctness of his answers, I may add, that the poor woman had frequently attempted to describe her sensations and notions to her medical attendants, who treated them with incredulity.

Cases of Abscess behind the Pharynx. By Christopher Fleming, M.D., F.R.C.S.I. Surgeon to the Netterville Hospital, &c.

In the seventeenth volume of the first series of this Journal, I made a communication on the subject of a peculiar affection of the throat arising from abscess behind the pharynx, and occurring at different periods of life. The presence of this affection in the child, especially in infancy, is often difficult of detection from its extreme rarity, and requires much accuracy in diagnosis. The following cases may hence possess some practical value.

Case I.—Francis Kelly, aged two months, was observed by his mother, a few days before her application to me at the Netterville Hospital(*a*), to have a peculiar snuffle in his breathing, some difficulty in deglutition, and occasional attacks of dyspnœa of variable duration. In all other respects, the child was, and had been from birth, in excellent health. He was a well-thriven child, and his only nourishment was the breast. The "epidemic influenza" being then prevalent amongst the children of the poor, I considered these symptoms as premonitory of an attack of it, and directed my treatment accordingly, but the child did not improve. On the contrary, the symptoms above noted gradually increased in intensity, and severe fever was superadded. The child from day to day was intolerably restless; he could only suck for a moment or so, spasmodically snapping the breast in his mouth, when a violent paroxysm of dyspnœa would force him equally abruptly to drop it. In one of these paroxysms he was seized with a fit of convulsions, on about the eighth day from the date of his illness. This occurred about the middle of last month.

The features of the case now assumed a most alarming aspect, and a convulsive fit appeared to be momentarily threatened. The child lay in a semi-lethargic state, with the countenance full and bloated, and the features constantly undergoing changes from repeated muscular twitchings. The eye-lids were half closed, and the eye-balls protruding. The tongue, in perpetual movement, projected beyond the teeth and lips, as if too large for the mouth, a position which the mother remarked it retained within the last few days, during the casual slumbers of the child. In addition, the snuffle-breathing was most intense, accompanied by a loud gurgling noise in the fauces, and the dyspnœa and dysphagia were equally urgent. All symptoms were aggravated by attempting to put the child to the breast. From the cries of the child, it was obvious the larynx was unaffected, and no physical indication of any thoracic lesion could be detected. Under all these circumstances, I directed my attention to the pharynx; the examination produced a most violent paroxysm of dyspnœa, during which the child was seized with a slight convulsive fit. I satisfied myself that an abscess existed there, and bringing to my recollection the fact I had recorded in my former com-

(*a*) Mr. Torney, the resident medical officer at the institution, witnessed the progress of this case throughout.

munication, that a spontaneous discharge through the nose had taken place in the case of a child aged seven months, then reported, it occurred to me that I might, under the circumstances of this case, artificially imitate nature. I took my opportunity, and, rapidly passing my finger, pressed it with force against the abscess: purulent matter darted through the anterior nares. Afterwards the child appeared to suck with less uneasiness, and the respiration was improved. From day to day a variable amount of discharge took place from the nose, accompanied by very trifling alleviation in the prominent symptoms. The child, however, was able to take more nourishment, and the act of sucking was less distressing. About this time Mr. Colles and Mr. Wilmot saw the case, when the characteristic features of the abscess were still well marked. I was obliged more than once to make forcible pressure against it with my finger, to keep the opening free, and had yet doubts whether I should not make an opening through the mouth. With this view I consulted Sir Philip Crampton, being anxious as well for his opinion, as that he should see a case of the kind in so very young a subject. In his examination of the fauces so violent a fit of convulsions supervened, that he recommended me to rest satisfied with the opening already made, as he observed the purulent discharge from the nose then present, and as, from the very limited capacity of the mouth of the child, and its great sensibility, risk might attend further interference. I acted on his suggestions, gave the child mild stimulants and nutriment, and enjoined that position whereby the matter could get free egress, as in the former case. The child is rapidly improving in health, and has lost all the alarming symptoms which existed. The snuffle-breathing has not as yet completely disappeared, but the respiration and deglutition are natural. The child can suck continuously, and is getting fat.

Case II.—In July last, a young girl aged eleven years was brought to my friend, Dr. Montgomery, complaining of uneasy sensations about the throat and neck, which were to be dated to the latter end of the preceding April, and were not referable to any special cause. These sensations commenced with what is commonly termed a crick or stiffness in the back of the neck, and continued with variable intensity, causing more or less uneasiness, and often extreme pain in the ears. The movements of the head and neck were extremely limited, and necessarily measured with great caution to render them tolerable. The girl was delicate-looking, of strumous aspect and strumous constitution. Having had enlarged tonsils, and complaining of difficulty in swallowing, Dr. Montgomery's attention was early directed to the throat, where, after the lapse of six or eight weeks, a train of symptoms developed themselves, which led him to the conviction that an abscess was about forming at the back of the pharynx. Under these circumstances I saw the child, and I found all the symptoms to indicate its presence. The countenance was peculiarly expressive, the voice nasal and muffled, and the movements of the head and neck very remarkable. The latter particularly

brought to my recollection similar movements attendant on disease of the cervical portion of the spine. The muscles at the back of the neck were in a semi-rigid state, the sterno-mastoid equally so; and in speaking, the action of the labial and nasal muscles gave a sort of tetanic cast to the countenance. The jaws were separable, but limitedly so, admitting a finger to pass between them. The tongue was easily protruded, but yet with a sort of spasmodic jerk. The head was almost fixedly retained in the horizontal position, the lower jaw at the same time projecting forwards, as if to accommodate the pharynx in its functions. The elevation of the head or its lateral movement was wholly impracticable, and from the manner in which they were performed, gave a very peculiar stamp to the countenance. On stripping the thorax, a lateral curvature of the spine was visible; there was also extreme tenderness on pressure over the spinous processes of the cervical vertebræ, particularly their central portions. There were yet no other symptoms indicative of caries of the spine; there were no shooting pains along the arms, nor about the lateral portions of the head. In fact there was, latterly, rather a disposition to alleviation than aggravation of the original symptoms. The local characters of the abscess were most marked; there was a general blush of the fauces, and immediately behind the soft palate, when the tongue was much depressed and at the same time not allowed to protrude, a passing glance caught the pharynx bulging forwards in the median line, where, pressure being made with the finger, most unequivocal fluctuation could be felt through a tense, elastic, membranous wall. The boundary of the abscess above could be measured by the finger with ease, but below it was gradually bevelled off, the sensation of fluctuation being communicated throughout. Dr. Montgomery's opinion being confirmed, the opening of the abscess was decided on, and effected by an ordinary sharp-pointed bistoury, protected to about half an inch from the point. In proceeding to open it, I depressed the tongue well with the fore-finger of the left hand, and endeavoured to cloak the glottis on the escape of the pus. The opening was accomplished with ease, and was made in a *transverse* direction; a large gush of matter darted forwards, so as to fill the depressed cavity of the tongue, and more escaped by pressure from below with the finger passed into the mouth. The child expressed herself much relieved, and her attendant remarked she was able to raise up her head. I fancied also that its lateral movements were effected with more ease. On the ninth day after the opening of the abscess, I again saw this little girl; she expressed herself as being much better; the varied movements of the head and neck, though yet imperfect, were much improved. On examining the throat, the site of the opening presented an ulcerated margin; it was exactly in the median line, and could be seen without much difficulty. On introducing the finger into the pharynx, much fulness was discernible, and I could discover that this extended a good way below the level of the opening. I satisfied myself no matter was lodged in the abscess; its anterior

wall appeared as if detached from the spine, and it occurred to me that air might have kept it so. Syrup of the iodide of iron was directed, tepid salt-water bathing recommended, and every attention to improve the general health enjoined; Dr. Montgomery and I coinciding in the opinion, that in this case it was to be apprehended some lesion of the vertebræ existed.

January, 1850. I have heard from Dr. Montgomery, that the child has recovered from all previous symptoms, with the exception of a certain limited and studied movement of the head, and that the general health is perfectly restored.

The details of the above cases are given so much at length, that it is almost unnecessary to add any remarks. The second case requires none. The age of the child, and the chronic character of the abscess, with the other attendant local symptoms, assisted in removing any difficulties which might otherwise arise, and no hurried measures were called for, on the part of the surgeon. Its favourable termination, notwithstanding the more than probable connexion of the abscess with spinal disease, is, perhaps, its most remarkable feature. Not so, the first case; there, the tender age of the patient, the extreme acuteness and urgency of the symptoms, necessarily equivocal in their nature, and their purely local cause, tended most materially to obscure the diagnosis. I have recorded a case somewhat doubtful, at the age of four weeks, but I have never before met with one, so unequivocal in its nature, at a younger period than four or six months. I have brought these cases forward at present, even at the risk of repetition, from the conviction of their importance in the catalogue of diseases to which children are liable, and from the impression on my mind, that such affections of the throat too often escape observation; hence many children must fall victims to them, and many are subjected to treatment, if not inimical to, certainly wholly unfitted for their relief: treatment, from the nature of the attendant symptoms, necessarily active and severe. To my former communication on this subject I have little to add; the cases now reported are but a confirmation of the statements then made.

Cases of dry Gangrene. By Samuel G. Wilmot, M. D., one of the Surgeons to Dr. Steevens' Hospital.

Case of dry Gangrene from Arteritis.—Anne Kearney, aged 19, a pale, delicate-looking girl, of slender make, was admitted into Steevens' Hospital with "dry gangrene" of some of the toes of the left foot.

The last phalanx of the great toe is perfectly black, dry, cold, and shrivelled, evidently devoid of all vitality, and a portion of the mortification extends along the inner side of the proximal phalanx as far as the metatarso-phalangeal articulation. The last phalanx of the second and third toes is also in the same condition. The gangrenous parts are limited by an abrupt, elevated line, but the

disjunctive process has not taken place, nor is its intended commencement as yet announced by the ordinary red line. No fetor whatever can be observed to arise from the dead parts. None of the arteries can be felt to pulsate in the affected limb, the femoral artery from Poupart's ligament to the point where it perforates the tendon of the adductor muscles appears to be completely obliterated into a firm cord: the pulsations of the iliac artery can, however, be distinctly detected. There is extreme tenderness on pressure along the course of the tibial and peroneal arteries, which is not observed elsewhere.

The tibials and peroneals are not discoverable in the right foot either; the popliteal can be scarcely perceived, but the pulsations of the femoral are distinct. The patient complains of severe pain in the left foot; she says it is constant, but becomes so much aggravated at periods, especially at about two o'clock in the day, as almost to defy endurance. At night the pain undergoes another exacerbation which is minor in degree, but sufficient to deprive her of sleep.

Pulse 140; very small and contracted; skin dry and harsh; tongue dry; bowels regular. There is no cough; no stethoscopic indication of cardiac lesion, nor evidence of other disease; catamenia always regular prior to the occurrence of her present malady.

She has always enjoyed good health until now, and was never the subject of fever nor any other complaint except a simple cold. She has latterly been occupied in a dairy, and attending on cows, by which she was necessarily exposed to wet feet. Her diet has been for the most part good, but latterly not so much so, as it consisted almost entirely of tea, bread, and oatmeal stirabout. She is not aware that there was any disease in the meal, and does not know of any one in the neighbourhood having been affected similarly to herself. Does not recollect having received a hurt which might have been the immediate origin of the disease.

She states that nine weeks ago she was suddenly seized with intense pain in the ball of the great toe. It was of a burning character, and shot upwards along the limb; it was preceded for a few days by an unusual amount of coldness in both feet, but particularly in the left, the one now affected. After the lapse of two days the pain became somewhat mitigated, and she now perceived a small purple vesication on the inner side of the ball of great toe; she raised the cuticle by means of a needle, and thus a black spot was revealed. Beyond this part of the history of her case she cannot proceed with accuracy. The mortification, she says, spread rapidly; and when it had involved the last phalanx it was observed on the second and third toes, taking a similar course to that already described.

Ordered leeches along the course of the tibial artery of the left foot; fomentations of belladonna leaves, carbonate of ammonia internally, and a full opiate at night.

About a month after her admission the line of separation was

established, but had only advanced to a very small extent. She still suffered severe pain at night, and the paroxysms of pain which occurred daily about two o'clock were so urgent as to demand the exhibition of a powerful opiate. Her pulse still continued rapid; skin dry; great debility. Sulphate of quina was now substituted for the carbonate of ammonia, and some wine was ordered. The opium at night to be combined with an antimonial. Camphorated spirits to be applied warm to the gangrenous parts; and a few more leeches along the tibial artery, also over the femoral, a little below Poupart's ligament, where there was pain on pressure.

In the course of somewhat more than three weeks I removed the great toe, which had been separated at the joint by a natural process, with the exception of some tendinous and ligamentous bands. The ulcerative process had advanced as far as the bone on the other two toes. After the lapse of a fortnight more the gangrened point of the second toe had separated, and the part was healed. She still suffered pain, but it was much less intense, and the exacerbations in particular were rendered milder. Upon the whole she was decidedly improved. The temperature of both limbs was now measured by the thermometer, and the following is the comparison between them. Between the third and fourth toes of the left (mortified) foot, 84° F.; between same of the right, 86°. In the pudendum on left side, 92°; in right, 95°; temperature under tongue being 96½°. In ten days' time the mortified part of the third toe was detached as far as the bone; through this I sawed, and in a very short time it healed completely. After the separation, however, of all the dead parts, some pain still continued, maintaining its character of being aggravated at periods. Since the occurrence of the disease her catamenia were totally absent. She was now anxious to return home, and accordingly left hospital. She was ordered to take with her some aromatic iron mixture and pills of opium, which were to be used at night if necessary. Both feet were encased in carded wool.

Case of dry Gangrene from arterial Ossification.—Thomas Fitzsimons, aged 50, a pensioner, with a peculiar countenance indicative of present suffering and past hardship, rather emaciated, and looking much older than he states, was admitted into Steevens' Hospital on the 9th October, 1847.

The entire of the middle toe of the left foot presents a purple colour, and on each side, where it lies in contact with the adjoining toes, the cuticle is slightly raised, and the cutis itself is nearly black; the toe is perfectly cold, and is fast losing all vitality. The patient complains of pain of a dead, aching character, which he refers to the anterior part of the dorsum of the foot and across the metatarso-phalangeal joints. From the base of the affected toe a blush of inflammation extends for about two inches and a half upwards on the dorsum of the foot. The tibial and peroneal arteries cannot be felt, and the popliteal seems to be obliterated; a hard, round, cord alone indicates the situation of the vessel. The femoral can with care be traced,

but its pulsations are very feeble, and its parietes feel quite unyielding. The main artery of the opposite limb presents much the same character, but the popliteal in it can be perceived; the arteries about the ankle are, however, pulseless, as in the left. The pulse at the wrist is 80, soft and feeble; the heart's action is weak, and its sounds indistinct, but there is no auscultatory indication of valvular lesion. The patient complains of coldness of the feet at times. The temperature between the toes of the left (affected) foot is 88° F.; between those of the right, 93°; temperature under tongue being 98°.

He states that he served in the British army in India for twenty-two years, during which period he led a regular life, indulging but moderately in eating and drinking. His food was generally fresh meat and bread; his drink brandy, gin, and beer. He enjoyed good health while in India, never having had any disease except occasionally the hepatic and intestinal derangements so common in that country. In 1839 he returned to Ireland, where he has continued ever since. For some months previously to the appearance of his disease, his health and strength began to fail, and he was seized with diarrhœa, which was only kept in abeyance, not cured, by powerful astringents. He was also inconvenienced by constant coldness of the feet, with occasional numbness and sense of pricking, especially in the left foot. In this state he was obliged to perform a long journey on foot. On the day following he was annoyed by what he termed "a cramp" along the front of the left leg and thigh, succeeded by a feeling of excessive coldness and numbness of the foot. In the evening this sensation was replaced by that of a burning heat, especially upon laying the foot upon the ground. Upon rising the next morning he observed a small red spot on which a minute vesication had risen on the inner and under side of the middle toe of the left foot. In about three or four days after this period he was admitted into the hospital. Ordered one grain of watery extract of opium three times daily. The affected foot to be enveloped in carded wool.

October 13th.—Since his admission the cuticle of the toe has been entirely elevated by the effusion under it of a dark brown fluid, and the inflammatory blush on the dorsum of the foot has extended. He suffers severe pain, particularly at night. Three grains of carbonate of ammonia to be added to the extract of opium, and these pills to be taken three times daily. The toe and foot to be frequently fomented with decoction of poppies and camphorated spirits: one ounce of the latter to a pint of the former. He was also ordered wine.

20th.—The toe has now become quite black, dry, hard, and shrivelled, and over the metatarso-phalangeal joint the red line preparatory to the act of separation is distinctly perceptible.

27th.—A narrow line of ulceration has taken place through the skin, exactly at the situation the red line occupied. The dead part feels like a piece of pasteboard. He still complains of pain. Ordered

eight ounces of the carbonate of ammonia mixture and two scruples of black-drop, of which one ounce is to be taken three times in the day; the pills to be omitted. At this period the temperature of the foot was ascertained, and was found to be two degrees higher than upon the patient's admission.

November 10th.—The ulceration is now complete as far as the bone, which was cut through with a forceps. He has improved somewhat in appearance; he still, however, complains of pain, also of a cold, numb sensation which frequently seizes both feet.

27th.—The mortification extended a little beyond the point at which the bone was cut, and passed through the joint, separating the small piece of bone that had remained. All the dead parts are now detached, and the granulations which sprung up are in process of cicatrization.

December 1st.—He left hospital to-day. The parts are all healed; his health is much improved, but he still experiences pain and the cold sensation already described. The foot was closely rolled in carded wool.

The preceding cases furnish two instances of that peculiar and interesting form of mortification termed "dry gangrene," the pathology of which has from time to time afforded ground for much theorizing and speculation. Both cases acknowledge the same immediate cause,—deficiency in the supply of blood,—either from partial obliteration of the arteries or from diminution in their caliber; but remotely they are produced by very different morbid conditions.

In the first the mortification was evidently due to arteritis; the age of the patient, the tenderness along the tibial and peroneal arteries, as well as over a portion of the femoral, the feverish state of the system, which was so much disproportioned to the mere outward signs of disease, the fact of the origin of the disease being traceable to the local application of cold, are circumstances which point with unequivocal certainty to the existence of inflammation. In the second case the state of the vessels is rather to be presumed; still, from the advanced age of the individual, from the frequent and well-known presence of ossification in the arteries at that period of life, together with the feel communicated by the femoral artery, not alone of the left limb, but of the right also, we are authorized, I think, in attributing the mortification to an ossified condition of some of the arteries, if not of all. Now the recognition of these two distinct states of the arteries, as causes of dry gangrene, is not interesting merely in a pathological point of view, but is most important in practice, since the treatment of the two cases manifestly differs. Where arteritis is the cause, we must in the early stage employ antiphlogistic measures, enjoin the most perfect quietude in the horizontal posture, and oblige the patient to renounce every article of diet that is in the least degree stimulating. In the case above recited the general condition of the patient forbad rigorous antiphlo-

gistic remedies; besides, when she came under treatment the disease was rather subacute. In those cases, on the contrary, in which the disease owes its origin to ossification, reason, ratified by experience, directs us to adopt a plan precisely different. In the former case the cause of arterial obstruction is to be ascribed to the effusion of lymph—the product of inflammation, and the coagulation of the blood within the vessel; our object, therefore, should be to check as much as possible the effusion of this lymph, and to moderate its amount. In the latter case the deficiency of blood being the result of an ossified state of the arterial parietes, which renders them inelastic, diminishes their caliber, and in some instances completely obliterates them, the indication is to determine blood to the part, and this is to be accomplished by the administration of stimulants and tonics,—remedies which augment the vigour of the heart,—and locally by maintaining a uniform amount of heat. I am, however, aware that so high an authority as Professor Syme of Edinburgh condemns the stimulating plan of treatment in gangrena senilis, upon the ground "that there is a combination of weakness and over-action in the affected part," and that we should avoid exalting the latter in the least degree.

No doubt, in all cases except in those where the obstruction is complete, and is effected suddenly (which occurs seldom, if ever, unless as the result of arteritis), more or less increased vascular action precedes the mortification; and in many instances a slight degree of inflammation, arising from various exciting causes, which under other circumstances would be inoperative, is the forerunner of the death of the part. But, in fact, this "over-action" proves too much for the part, simply because of the want of a due supply of blood, it being from this circumstance low in vitality; just as we find in numerous other instances, parts in which the vitality is much beneath the standard of health, unable to support the smallest degree of inflammatory action without terminating in death. It is clear then that to exalt the vigour of the parts, and to promote nutrition therein, by encouraging the circulation of the blood, which every advance of the disease in the vessels tends to cut off,—in short, to make amends as much as possible for the effect to which the "*fons et origo mali*" necessarily lead,—are the rational indications in the treatment of senile gangrene. We thus endeavour directly to counteract the cause of the disease instead of soothing its effect, a plan more scientific if not more practical; for it is evident that could we by artificial means raise the vitality of the parts to that of the natural standard, by affording the ordinary supply of blood, mortification would be prevented, and that on the eve of occurrence might probably be anticipated. We see then that in this disease, as in many others, two cases identical in nature are diametrically opposite as regards the particulars of treatment, merely from a difference in their remote causes.

Notices of rare Cases in Midwifery Practice. By C. D. Purdon, M. B., F. R. C. S. I., Belfast.

1. *Hydrometra.*—A young lady, aged 18, of lymphatic temperament, middle size, chest well developed, breasts without any areola, abdomen very large, states that about nine months previously the catamenia ceased, after great mental agitation, and in some weeks she began to have regular attacks of morning sickness, and after a short time perceived her abdomen to be enlarged; from this she went on increasing in size regularly until the ninth month, when she appeared in the last stage of utero-gestation. The os uteri was now quite small and virgin-like, cervix long and thin, the uterus appearing much depressed; she had slight œdema of the feet. At this time she suffered from an attack of enteritis, which yielded to the usual remedies; in some days after, she had a slight bloody discharge from the vagina, which soon ceased of its own accord. She then had regular paroxysms of apparent labour pains for three consecutive nights, being well during the day, when a yellowish coloured serous discharge began to issue from the uterus, and continued for four weeks, the abdomen falling gradually each day, till at length it attained its usual shape and form. In a few weeks she had a regular catamenial discharge. She is now perfectly recovered.

2. *Vicarious Lochial Discharge.*—Attended Mrs. —— of her seventh child. The labour natural, and everything went on well till the eighth day, when I was informed by the nursetender that the lochia had entirely ceased, and that there was a reddish-coloured discharge from the rectum. Her pulse at this time was only 72, there was no pain on pressure, and she had not the slightest fever. By using appropriate means, the lochia, after forty-eight hours, returned to their usual channel.

3. *Labour without any Pain in the second Stage.*—Mrs. ——, aged 21, was taken ill of her first child, at seven in the morning, and had frequent dilating pains for about three hours; these ceased on the rupture of the membranes, and she appeared to be free from all pain, when she suddenly said that there was something pressing down, and on going to examine, I found the head pressing on the perineum. The head advanced rapidly with each uterine contraction. She lay quite still, with eyes half closed, till the child was expelled, without any sensation of bearing down, or expressing that she felt any pain.

SELECTIONS FROM BRITISH AND FOREIGN PERIODICALS.

On Gastrotomy. By Professor Sédillot.

Professor Sédillot, of Strasbourg, has already laid before the Academy of Sciences many memoirs on the subject of gastrotomy. with the intention of demonstrating the facility of curing wounds of the stomach, the little danger arising from fistulæ of that viscus, the possibility of maintaining life by artificial alimentation, bymeans of œsophagean tubes; and, finally, the ease with which, in animals, we succeed in not only maintaining life, but also their condition, after gastrotomy has been performed, by food supplied through the fistulous opening into the stomach. On the 19th of November he read the following Report on the results of gastrotomy, which he had performed upon a man aged fifty-two years, affected with narrowing of the œsophagus to such a degree that nourishment could only be supplied by means of fluids, and which were often almost immediately rejected, mixed with saliva and mucus. Catheterism of the œsophagus was thrice attempted, without success. Emaciation was extreme, and the patient had lost 120 pounds weight within the year. Under such circumstances M. Sédillot thought it advisable to perform gastrotomy. The patient was put under the influence of chloroform; a crucial incision, of about an inch and a half in diameter, was made in front of the rectus muscle, and about two inches below and to the outer side of the xiphoid cartilage. The tegumentary flaps having been thrown back, he divided successively the aponeurosis covering the rectus, the muscle itself, the aponeurosis situated between it and the peritoneum, and, finally, the peritoneum first raising it with the forceps. A blunt hook being then introduced, a small portion of epiploon was drawn out, afterwards the transverse arch of the colon, and with it the stomach. But having experienced much resistance, he returned the great intestine with the epiploon, retaining the superficial layers of the latter; he then separated them in the abdomen, and gradually drew through the wound a portion of the greater curvature of the stomach. The epiploon being then returned, a puncture was made in that part of the stomach which appeared to be its anterior surface, and at the junction of the pyloric and cardiac extremities. A canula was now introduced into the stomach through this opening. This canula was composed of two semicylindrical portions, forming, when joined, a perfect tube. Each of these portions had projecting borders, bent at right angles; the one to support the stomach against the walls of the abdomen, and the other to maintain the instrument in the exterior wound. Tubes of silver, of different diameters, could be introduced between the two divisions of the tube, so as to separate them more or less if requisite, to allow of their being cleaned, and to permit, when the adhesions of the

stomach should be formed, the removal of the entire of the instrument for a short time or altogether, according to the indications. When the stomach was punctured, M. Sédillot introduced two directors at the opposite edges of the wound, and upon the grooves of these he passed, one after the other, the two pieces of the canula; then a tube, stopped by a cork, was placed between the two, to keep them separated. The different parts of the instrument were secured by means of buttons arranged for that purpose, and the stomach was returned into the abdomen.

The entire length of the canula, about two inches, was then within the abdominal parietes, and was kept in its place by means of tapes, which passed through the eyes in the instrument, and were fastened round the body. The operation lasted an hour. During its performance the patient was kept in a state of insensibility. The rest of the day was passed calmly; *eau sucrée* and about eight ounces of chicken broth were at intervals injected through a gum elastic tube into the stomach, with a tin syringe. On the removal of the cork, the stomach was sometimes found distended with a greenish bile, at other times it appeared empty. All the injected fluid accumulated in the cardiac portion, and showed no tendency to escape outwardly. At nine o'clock in the evening, eleven hours after the operation, the patient was quiet and made no complaint. He slept during the night, but towards four in the morning he awoke suddenly; two hours afterwards he was attacked with paroxysms of dyspnœa and suffocation. The respiration became laborious and quick. He died quietly one and twenty hours after the operation. On examination of the body there was no trace of peritonitis, with the exception of some lenticular spots of effused blood around the wound in the epiploon, and the effusion of a few drachms of reddish serum into the left hypochondrium.

The canula had entered the walls of the stomach, on its anterior surface, about three inches and a half from the pylorus, four inches and a half from the cardiac orifice, an inch and a half from the greater curvature, and nearly two inches from the lesser. The stomach was slightly ecchymosed by sanguineous infiltration, to the extent of about three inches in length, and an inch and a half in width; it contained about six ounces of a greenish fluid. The liver was congested, and of a brown colour; the gall-bladder was large and distended with green bile. The bladder was empty, although the patient had not lately passed water. About the level of the sixth rib a very hard, ovoid, whitish tumour, an inch and a sixth in length, and nearly an inch in circumference, was found in the œsophagus; through it the left pneumogastric nerve passed, being slightly dilated on entering and escaping from the tumour. The œsophagus was so blocked up that a stylet of the eighth of an inch in diameter could scarcely be forced through it. The tumour, when cut into, was whitish, lardaceous, and grated under the knife; the mucous membrane was puckered, adherent, and pierced with small apertures, from which escaped a quantity of a sebaceous-looking fluid. The tumour pre-

sented all the elements of epithelial cancer of the lips. From the result of this case M. Sédillot deduces the two following propositions as regards this operation:

First: that the stomach should be kept in close contact with the abdominal parietes, so as to induce adhesions at once between the opposed surfaces of the peritoneum. With this view he suggests the necessity of using a few sutures, in addition to the mechanical effect of the canula. Secondly: that during the first day nothing whatsoever should be injected into the stomach; and, during the second day, only a small quantity of water, with the view of restoring the functions of the stomach gradually.—*Archives Générales de Médecine, December*, 1849.

[The results of this case, described by M. Sédillot, are sufficient, we think, to deter surgeons from having recourse to his operation of gastrotomy. It is applicable to very few cases, except those in which organic disease is present in the œsophagus, and in such the operation, even if successful, could only prolong the patient's sufferings until the disease spread to neighbouring parts.]

Foreign Body in the Rectum, requiring the Operation of Gastrotomy for its Removal. By M. Reali.

Under the designation of a "very extraordinary case," the author relates the really strange history of a peasant, aged 40 years, who, *in order to diminish the expense of his maintenance*, conceived the idea of closing the anal orifice. He consequently selected a piece of wood, irregularly cut, a little blunted at the point, and notched towards its base, by means of a pruning-knife, obliquely from below upwards, and from without inwards. It was about eight inches long, and from three to four inches in circumference at the base. The simple fellow introduced the foreign body so deeply into the rectum that he could not withdraw it, and after having suffered extreme agony for nine days, he was removed, on the 18th December, 1848, to the Orvieto Hospital, more dead than alive.

Signor Reali, who examined him on his admission, introduced his index finger in its entire length up the rectum, but could not reach the piece of wood, so far had it been pushed up. As it was impossible to extract the plug by the natural passage, Signor Reali saw no other means of saving his life except by performing the operation of gastrotomy; for the points presented by the extremity of the wooden plug, as also the serratures on it, and the spasmodic obstruction offered by the rectum, prevented its descent. He then cut into the abdomen and introduced his hand, but before deciding upon opening the intestine, he tried once more, by pressing on the foreign body, to force its exit through the passage by which it had been introduced; this attempt having failed, he was obliged to cut the intestine and to extract the piece of wood through the opening.

The operation was terminated by re-uniting the intestine, and

subsequently the abdominal parietes, by suture. The case resulted in perfect recovery, *to the applause and ecstacy of all the beholders*, as the Italian text informs us.

In commenting on this singular, but scarcely credible case, which is reported in the *Correspondenza Scientifica in Roma*, the editor of the *Gazette Médicale de Paris* remarks: "We would willingly add our approbation to that of the spectators, if it were demonstrated to us, that no other mode remained of extracting the foreign body by the natural passages. Unfortunately the author only introduced his fingers, and does not appear to have thought of seizing the piece of wood with a lithotrity forceps. It seems to us impossible that, properly handled and managed with perseverance, a lithoclast should not have succeeded in reaching, securing, and extracting the plug. Nor could the oblique notches, with which the piece of wood had been serrated, have opposed a serious opposition to the attempts to extract downwards. The expedient of a protecting tube introduced between the rectal surface and the rugous foreign body, in order to facilitate the passage of the latter, is doubtless as well known in Italy as in France.—*Gazette Médicale de Paris*, November 17, 1849.

On the Diagnosis of Compression of the Recurrent laryngeal, and Pneumogastric Nerves. By M. Legroux.

The recurrent nerve, says M. Legroux, is the exciting nerve of the muscles of the larynx, with the exception of the crico-thyroid, which receives its nervous influence from the superior laryngeal. The muscles of the pharynx, of the œsophagus, and of the trachea, and also the heart, are likewise to a certain extent dependent on this nerve, through the filaments which it sends to them. The lungs, the muscular fibres of the bronchi, the heart, and the stomach, are more or less subordinate to the pneumogastric nerve, the exciting agent of sensibility and of muscular motion. Its function is double, while that of the recurrent is almost exclusively motor. Lesion, section, or compression of these nerves, gives rise to a series of symptoms in relation with their physiological endowment. Nevertheless their alterations have always been confounded with various diseases of the larynx,—phthisis, croup, tracheal phthisis, &c. To remove these morbid alterations from the domain of physiologico-anatomical facts, in order to elevate them to the rank of pathological changes accessible to diagnosis, is the object of M. Legroux's observations.

The alterations of the pneumogastic and laryngeal nerves, pointed out in some incomplete observations scattered through various scientific periodicals, and in four detailed observations by the author of the memoir, are the following: 1st, physical lesions, the effects of which upon the vocal apparatus have been indicated by Galen; 2nd, the development of small tumours in the substance of the nerve, which is rare; and, 3rd, compression, distention, atrophy, destruction to an extent more or less considerable, and

adhesions to tumours by means of a fibrous tissue in which the nerve seems to be confounded. The compressing tumours may be either the hypertrophied thyroid gland, or bundles of tuberculous ganglia developed in its course; but more frequently an aneurismal tumour of the right subclavian artery, or of the arch of the aorta, both of which press on the nerve in the curve formed by the recurrent of their respective side.

The symptomatology of lesion of the recurrent nerve consists in local phenomena and functional derangements. The former depend on the compression exercised on this nerve and the neighbouring organs, and consist in a feeling of restraint, of uneasiness, or of oppression, never of neuralgic pains. The latter depend on the paralysis of the muscles of the larynx, at the side corresponding to the lesion of the nerve. From this paralysis, a subsidence of the arytenoepiglottidean ligament on the glottis, and the diminution by one-half of the orifice, result; and, in consequence of this fact, we observe a disturbance of phonation, and other symptoms, on which it is necessary to dwell shortly. 1st. The weakened voice can be raised only by an extraordinary effort of expiration, without which it is feeble, and when raised it is hoarse. 2nd. The movements of inspiration and of expiration give rise to a sound of laryngeal rustling (*frôlement*), analogous to that which the motion of a moveable growth would produce, and more or less similar to that caused by a polypus in the nasal fossæ.

Incomplete aphonia, hoarseness of the voice, and a laryngeal murmur, are, then, the three phenomena which are consequent on lesion of the recurrent nerve. But these phenomena, if the author has not been deceived in his judgment, offer furthermore a special character, which, if it is not pathognomonic, at least directs attention to the nerve. This is the *unilaterality* of the voice, opposed to the unilaterality of the rustling sound. The former seems to be produced only on one side; it is incomplete, and cracked (*boiteuse*). The rustling likewise appears to proceed from but one side, so much so that in the first patient observed by the author, and in whom a polypus of the larynx had been diagnosed, the seat of this growth had been assigned to the paralysed side of the larynx. If, nevertheless, this character were wanting, we should always have as guides, aphonia, hoarseness, and rustling. This latter phenomenon might even be absent. The aphonia alone ought to introduce into the question of the diagnosis the possibility of lesion of the recurrent nerve. A less immediate, but not less necessary consequence of lesion of the recurrent, is dyspnœa. The column of inspired air, diminished by half, becomes insufficient for respiration; hence an habitual dyspnœa, which becomes exacerbated in paroxysms,—in asthmatic attacks, like those which are observed in œdematous angina. However, the patients do not complain of any pain in the larynx, occasionally only of a tickling sensation; the air appears to traverse this passage with freedom. An ordinarily intense bronchitis, more marked on the side of the affected nerve, accompanies the dyspnœa.

The simultaneous lesion of the two laryngeal nerves is still in the class of incomplete observations. This lesion cannot be sufficiently complete to determine a general paralysis of the laryngeal muscles, for then death would be immediate. The compression of the two recurrents by a cervical tumour ought to produce effects analogous to those which have been just pointed out, with the modifications gradually induced in them by the increasing paralysis, and probably more marked on one side than on the other.

The simultaneous or isolated alteration of the pneumogastric nerve, below the origin of the recurrent, whatever may be its cause, does not appear to be attended by the acute pains which accompany lesion of the external nerves of sensation; a proof that the sensibility of which it is the conductor is modified by the uses of this nerve.

Observation furnishes but few data respecting the alteration of the cardiac and pulmonary functions which seems to be the consequence of the lesion; vomiting appears to have been observed in the cases of lesion of the left pneumogastric, in consequence of the contractions of the pyloric extremity of the stomach on its paralysed cardiac part.

The diagnosis of lesion of the recurrent nerve is based then on the triple consideration,—1st, of the laryngeal phenomena; 2nd, of the absence of morbid lesions in this organ; 3rd, of the presence in the course of this nerve of a tumour capable of compressing it. In a surgical point of view the seat and direction of a wound will serve as a guide in the investigation of the causes of a traumatic aphonia.

If the tumour be external, if it be a goître, masses of cervical glands, or, above all, an aneurism of the right subclavian, as M. Isidore Bourdon has observed, the diagnosis becomes sufficiently easy: it is sufficient to establish the relation of the tumour with the recurrent nerve. But if the tumour has its seat in the chest it will be almost certainly confounded with an affection of the larynx. This has hitherto always happened. The author referred to then reported his first case, in which the diagnosis had been pointed out in a manner almost mathematical.

M. Legroux lays down the following rules as the future grounds of diagnosis: 1st, to ascertain the presence of the aphonia, the hoarseness, the rustling, &c.; and if they are present, the unilaterality of these phenomena; 2nd, to determine by examination the condition of the larynx externally, to inspect the throat, to examine by the touch the superior opening of the glottis, and to ascertain thereby the integrity of the larynx, the absence of inflammation, of alteration of the cartilages, of œdematous swelling, &c.; 3rd, and lastly, the question remains to be solved, namely, the presence of a tumour in the course of one of the recurrents. Aneurism of the arch of the aorta being the most common, it is to the upper part of the left side of the chest, below the internal extremity of the clavicle, that we must direct our investigations with the view of establishing its existence. If the aneurismal dilatation be directed backwards, we ought to look for it towards the internal postero-superior part of the cavity, if

we have failed to discover it anteriorly and superiorly. These three facts established, the diagnosis follows with certainty; for the expansion of the arch of the aorta cannot take place without distending the recurrent nerve which passes round it. An altered condition of the par vagum may be inferred if repeated vomitings accompany these symptoms.—*Archives Générales de Médicine*, December, 1849.

Case of rapid Decomposition of the human Body; with Remarks on Putrefaction, and the alleged Effects of Lime in accelerating that Process. By Alfred Swaine Taylor, M.D., F.R.S., Lecturer on Medical Jurisprudence and Chemistry in Guy's Hospital.

The anomalies to which the process of putrefaction in the dead body is exposed are well known to medical jurists. In some instances a body will remain for many days without any change taking place in it; in other cases the chemical changes due to putrefaction, or the resolution of the organic into inorganic compounds, are manifested in a few hours. In cases of retarded putrefaction a belief generally arises that the person is not dead, but in a trance. The fact, however, is, that the body merely resists, for a longer time than usual, those changes which every dead human body must sooner or later undergo(*a*). Cases of rapid putrefaction are not uncommon, and are particularly observed, *cæteris paribus*, in the bodies of those individuals who have died from debilitating diseases, or whose sanguineous systems are remarkably full of blood. It is not improbable that at the time of death the blood in such subjects is in a highly diseased condition.

The following case recently occurred in Guy's Hospital; the report has been drawn up for me by Mr. A. G. Osborne, an intelligent pupil who is now attending the lectures at Guy's Hospital.

"Richard Ball, æt. 39, employed as porter in the brewing establishment of Barclay and Co. for many years past, residing in No. 21, Russell-place, Bedford-street, Great Guilford-street. Habits very intemperate; drank porter to excess, and did not refrain from spirits also. About five years since he broke his leg, and for two months was under Mr. Cooper's care in the hospital; and his health may be judged of by the fact that Mr. Cooper thought proper to allow him two or three pints of porter daily during that time. On account of the weakness of the limb he was admitted twice or three times between his discharge and the present time. He is described on his readmission (Oct. 24th, 1849), as a stout, fat man, with pale complexion, and with the general tissues of his body flabby. For twelve months past it seems he has had a cough, much aggravated of late; and about a week since he first observed blood in the sputa, which has continued at intervals since.

"He is very feeble; pulse weak; bowels regular. No albumen in

(*a*) Some remarks on this subject will be found at the end of this paper.

the urine. Distinct murmur over the left side of the sternum, but whether with first or second sound could not be ascertained. The nurse states that she did not observe his perspiration more than ordinarily disagreeable; and, if it had been so, she thinks she must have observed it.

"On account of the dyspnœa and debility, Dr. Barlow ordered cupping and other remedies.

"Oct. 25th.—Much the same. Towards evening his breathing became more distressed; and at half-past ten o'clock P.M. he suddenly expired, his general symptoms during the day not having indicated immediate danger. The body remained in the ward through the night until eight the following morning, the temperature varying from 60° to 65°. Decomposition had set in unusually early, as even then, although little more than *nine* hours had elapsed, there were large bullæ, filled with sanguineous fluid, on the left side of the body; and by half-past two P. M. on the 26th,—*i. e. sixteen* hours after death,—the corpse presented a most extraordinary appearance. The entire surface was more or less discoloured, blue or purple; the eyelids were bulged forward; the nostrils were filled with bloody froth, through which continued to issue minute bubbles of gas. The abdomen was tense from excessive distention, as a result of gaseous putrefaction; and the skin of the scrotum as tight as any artificial means could have made it. The groins, particularly the right, looked as though putrefaction had begun on parts much bruised during life, and very minute blood-vesicles appeared on the skin in several places. On puncturing the skin of the scrotum, a jet of carburetted hydrogen was emitted, which burnt steadily for above a minute, and the same took place wherever a puncture was made in the legs and abdomen. The highly offensive state of the body precluded a *post-mortem* examination, which was not considered necessary."

Mr. Osborne requested me to see the body, *seventeen hours* after death. The process of putrefaction had still further advanced. The whole of the skin was tense; that covering the neck and face was so distended that the identification of the deceased from the features could not have been made. The skin was covered throughout its whole extent, with blue, green, and livid red patches, and in some places phlyctenæ had been formed, and the cuticle had become removed. In fact, the appearance of the body was such as it is only common to find after the lapse of two or three days in hot summer weather, and after six or seven days when the thermometer is neither unusually high nor low. The state of the body corresponded precisely to what M. Devergie has described as the fourth or last period of change after dissolution(*a*), and this, from his observations made on the dead bodies deposited at the Morgue, he fixes at from six to twelve days after death. I think most medical practitioners, if they had been required in this case to express an opinion of the time which had elapsed since death, would, from the putrefied state

(*a*) See Lectures in Medical Gazette, vol. xxxviii. p. 186.

of the body, have referred it at least to an antecedent period of five or six days, considering the season of the year. The whole of these changes had, however, taken place in *seventeen* hours from the time of death. Such a case of course conveys great caution in forming a medical opinion(*a*).

The gases, which issued in jets from every part of the skin which was pierced, were highly offensive. When a flame was applied to the puncture the gas burned suddenly with almost explosive violence. The flame which issued from the aperture was like that of the proto-carburetted hydrogen. The stream of gas did not discolour a slip of paper moistened with acetate of lead, nor did it produce any change on paper dipped in nitrate of silver. Hence it was unmixed with sulphuretted or phosphuretted hydrogen. The carburetted hydrogen was combined with other gaseous products of putrefaction, the nature of which has not yet been determined.

The cause of this rapid access of putrefaction in the body of an individual dying in the prime of life, and at a season of the year when the process is considered to be slow in its appearance, may be assigned to two circumstances:—1st, to its having been exposed soon after death to an atmosphere at about the temperature of 65°; and 2nd, to a morbid or diseased condition of the solids and fluids of the body, which may have rendered them more readily susceptible of chemical changes. The intemperate habits of this man, and the excessive quantity of alcoholic liquors which he drank, may have tended to produce changes in the condition of the blood and fluids which would render them easily liable to decomposition (other circumstances being favourable) so soon as the breath had left the body. The exposure to the temperature of 65° ceased when the body was removed from the ward,—*i. e.* in less than ten hours after death,—but putrefaction had then already commenced; and it is well known that, when this process has once begun, it continues to spread with great rapidity, even when the conditions of exposure subsequently are less favourable to its continuance.

In this case the whole history is known; but in regard to the bodies of persons found murdered, the facts which are necessary to form a correct judgment cannot, of course, be ascertained. Let us suppose that a body in such a state had been found buried beneath the floor of a room, and a medical man had been asked to assign the period of death,—he might, from common experience in such matters, have declared it to be impossible that the body could have been living within *twenty-four hours* of the time of its discovery; and suspicion might be thus removed from persons really guilty of murder, because it could perhaps be clearly proved that they had not been in or near the premises until within a day of the discovery of the body. An innocent person, seen in company with the deceased five or six days before, might, on the other hand, be unjustly suspected of having been accessory to his death.

(*a*) See Lectures in Medical Gazette, vol. xxxvii. p. 1065.

This supposed case is not taken for the purpose of throwing doubt upon medical opinions, but to suggest great caution in forming them.

The causes of putrefaction, and the circumstances which accelerate or retard its appearance after death, have not yet been sufficiently investigated, and they are therefore but very imperfectly understood. I have elsewhere published(*a*) several cases which show that questions of vital importance to accused persons often depend on a knowledge of this subject on the part of the medical witnesses examined. The evidence of non-medical witnesses in reference to putrefaction can never be safely admitted; and yet, in Courts of law, questions are sometimes put to them on the rapid or slow access of putrefaction, and their answers, given of course at random, are made use of, if apparently available, by counsel for the prosecution or defence.

An instance of this kind occurred at the trial of a woman named Geering, at the Lewes Summer Assizes, 1849, for the murder of her husband by poison. The deceased, Richard Geering, died on the 13th September, 1848, and his body was examined, by order of the coroner, on Friday, April 27, 1849, after an interment of rather more than seven months. As usual in cases of arsenical poisoning, the body was, on the whole, well preserved. The abdominal viscera were certainly in a remarkable state of preservation; and that arsenic was the cause of death was rendered clear by chemical and pathological evidence. The substance of the heart was quite firm, and arsenic was found in it. Mr. Ticehurst, of Hastings, who referred the case to me, observed that, when the body was removed from the coffin, the face and upper parts were very much decomposed.

In the defence it was suggested that the preservation of the body was to be accounted for by the fact that, when the deceased was buried, a slab of wood was placed immediately above the coffin to keep the earth from it; and the village undertaker, who deposed to this fact, said, in answer to a question put by counsel for the prisoner, that this would have the effect of preserving the body for a longer period. It need hardly be observed that a slab of wood could have no such influence on the process of putrefaction as that which was here suggested; and as only that part of the body was preserved in which the arsenic was discovered, it is clear that this substance must have been the real cause of the preservation of the abdominal viscera.

Effects of Lime on Putrefaction.—There are some substances which, it is well known, have a tendency to prevent putrefaction; while, on the other hand, there is one which, by popular repute, possesses the extraordinary power of accelerating this process. The substance to which this property is assigned is *lime*. At the recent trial of the Mannings, one of the medical witnesses is reported to have said that he had no doubt, when he saw the body of the deceased O'Connor,

(*a*) Lectures in Medical Gazette, vol. xxxviii. p. 184.

it must have been under the ground for a week at least. He formed this opinion from the state of extensive decomposition in which he found it. The examination, as reported in the daily journals, then proceeded:

"*Q.*—In forming your judgment, did you take into consideration the fact that *lime* had been used?

"*A.*—I did; the lime would certainly cause the body to decompose quicker.

"*Q.*—Taking into consideration the quantity of lime used, can you still form an opinion as to whether the body had been under ground for a week or less?

"*A.*—I have no doubt whatever that it was there for a week.

"*Q.*—Would not the effect of lime be to disfigure the features very much?

"*A.*—Yes; and a stranger might not be able to trace them.

"*Q.*—Would the external application of lime make any difference with respect to the decomposition of the brain, which was found in a fluid state?

"*A.*—The lime might be absorbed through the fractures of the skull, and so cause the decomposition of the brain."

The medical opinion in this case, respecting the period during which the deceased had been dead, was fully confirmed by general and circumstantial evidence. There was nothing to impugn its correctness. The only question is, whether effects were not here attributed to the use of lime which were really due to the natural process of decomposition. It is said that the prisoners procured the lime in a fresh-burned state, and slaked it over the body of the deceased. The substance would in this case act by the *heat* evolved, the effect of which would be again counteracted by the use of much water and the speedy covering of the body with earth. I have been informed that so much water was employed that the lime was found quite in a plastery state; and there was no evidence of the marks of burning, as a result of the use of lime, on any part of the skin.

The case related at the commencement of this paper shows that putrefaction may take place very rapidly where *lime has not been used;* and it becomes therefore necessary to inquire whether this substance really possesses any influence whatever in accelerating or modifying the process. Some years since, the body of a child in a case of suspected infanticide was brought to me for examination. It had been placed in a box, and covered with lime. The body, considering the period of death and the season of the year, was in a better state of preservation than might have been expected. The abdomen and lower extremities, which had been completely covered with powdered lime, were very well preserved. There was certainly nothing to show that in this case the lime had had any influence whatever on the process.

I am unable to find, in any work relating to the signs of death, facts which tend to bear out the popular belief that lime accelerates putrefaction. By the strong affinity of this alkali for water, as well as by its chemical power of fixing carbonic acid, sulphuretted hydro-

gen, and other animal effluvia, it is admirably adapted to prevent the escape of these effluvia from a putrefying corpse; and, when placed in a coffin or a grave, it will then to a certain extent exert a beneficial influence.

On the unbroken human skin, powdered lime appears to have no corrosive or chemical action whatever. It is the least soluble of all the alkalies, excepting magnesia. A stiff cream of lime possesses no corrosive properties on the skin, while solutions of potash, soda, and ammonia, even when considerably diluted, rapidly dissolve it. Potash and soda, however, by this well-known action on animal matter, do not accelerate putrefaction ; they merely act chemically by combining with and dissolving the tissues: and, were lime more soluble than it is, it would probably soften and dissolve the soft parts of the body(*a*).

The following experiment shows what its influence is on the raw flesh of a recently dead animal. Two pieces of beef, the one (A) covered with powdered lime which had become partially slaked by exposure to air, and the other (B) left uncovered in its raw state, were exposed to the air of an apartment at a temperature of about 55° for fourteen days. In the course of four days the uncovered piece of beef (B) was very offensive from putrefaction. The piece which had been covered with lime (A) had also undergone decomposition, but the effluvia had been so retained by the lime that no odour was perceptible except within a few inches. The uncovered beef (B) at the end of a fortnight had become somewhat dry on the surface, from evaporation, but it was much putrefied, and very offensive. The piece covered with lime (A) remained soft, and quite firm in the fibre; it had an offensive smell at a short distance, modified evidently by the action of the lime, but there was no appearance of corrosion, no chemical softening of structure, nor any change of condition to indicate that putrefaction had been at all accelerated or even modified in it. When closely examined, the external surface had acquired a greenish colour, but this was apparently due to the chemical effect of the alkali on the hæmatosine(*b*).

This green colour was found to be only superficial; for within, the muscular fibre had a dark-red brown colour, like that of the uncovered beef (B). After the lapse of three weeks, B had become much reduced in bulk by evaporation, while A, the beef covered with lime, still remained soft, and retained all the toughness of fibre peculiar to it. There was not the least sign of corrosion, or of any chemical action, excepting the slight superficial change of colour above ad-

(*a*) Lime is largely used in the cleansing of skins for tanning: it has no chemical or corrosive action on them, but merely serves to combine with and remove the fat.

(*b*) The green colour of the skin and muscles during putrefaction is, probably, owing to the evolution of ammonia and the action of this alkali in a nascent state on the red colouring matter of the blood contained in the minute vessels. It appears first on the skin of the abdomen, probably from the decomposition of the contents of the intestines, and is one of the most striking signs of real death.

verted to. At the end of five weeks both pieces had become perfectly dried, as a result of evaporation, and putrefaction had become entirely arrested. The piece A, which had been covered with lime, was as hard and firm as a piece of wood, and broke with a brittle fracture. The piece B retained a certain degree of toughness. There was no loss in either, except that which had arisen from mere evaporation and shrinking.

Judging from the result of this experiment, although lime cannot be said to retard, there is no proof that it accelerates or even modifies the process of putrefaction. With the exception of changing the colour of the blood to green in parts denuded of skin, it appears to exert no other influence on the process than that produced by chalk, clay, or any other insoluble powder, laid over dead animal matter: it cuts off to a certain extent the access of air, and, if used in a very thick layer, it would thereby rather tend to retard than to quicken putrefaction. It prevents evaporation for a certain period, so that the animal matter remains soft for a longer time; but, in the end, the water is absorbed, and the animal substance becomes hard, dry, brittle, and imputrescible.

It appears to me that there is an entire want of evidence that lime under any circumstance quickens putrefaction. This process is essentially dependent on *heat*, *moisture*, and *air*, and according to the presence or absence of these conditions, so is the process rapid or slow. The three conditions must co-operate, or putrefaction will be arrested. Thus a *temperature* of 32° or of 212° puts an end to the process. As to the effect of *moisture*, I have found that albumen,—a substance which putrefies in a few hours,—may, when deprived of its moisture by chloride of calcium, be kept without any change for twenty years exposed to the air at the most favourable temperature for putrefaction. The effect of *air* is entirely due to oxygen. In an experiment performed some years ago, a piece of beef was perfectly preserved for *two hundred and sixty-four* days, through all changes of temperature during this long period, without putrefying. This was effected by merely suspending it in a bell-jar containing deutoxide of nitrogen gas, which, as it is well known, acts by preventing the access of oxygen.

The popular idea that lime quickens putrefaction has probably arisen from the supposition that it was used with this view in coffins and graves. Its action, however, is really that of preventing the diffusion of noxious effluvia; and, for this purpose, by its rapid combination with carbonic acid, sulphuretted hydrogen, phosphuretted hydrogen, and animal effluvia generally, it is admirably adapted. In an experiment recently performed, it was ascertained that a drachm and a half of slaked lime removed in ten minutes the whole of the sulphuretted hydrogen and carbonic acid from forty ounces of foul sewer water, which before the addition of the alkali evolved sulphuretted hydrogen in large quantity. In this respect it was found to be much superior to the chloride of zinc, which at the best can only remove a part of the sulphuretted hydrogen, and does not at all affect the other offensive effluvia.

Lime will be found a very cheap, safe, and useful deodorizer. Its value as such does not appear to be sufficiently known.

Retarded Putrefaction, apparent Death, and premature Interment.—Although it is not my object in this paper to consider the question of *retarded putrefaction*, I may here advert to the strange superstitions to which this condition of the dead body has given rise. During the late fatal prevalence of cholera several cases of retarded putrefaction occurred, and produced some popular excitement in their respective localities, from the dread of premature interment. A remarkable case of this kind occurred at Bristol, in October, 1849, in which a youth died from an attack of cholera in about fourteen hours. After the lapse of forty-eight hours, it is stated that the warmth of the body was perceptibly retained, and there were no signs of putrefaction. This process, however, ultimately manifested itself. It is as difficult to say why, in this and other similar instances, the laws of chemistry should have been so long suspended, as why, in the case described in the paper, they came into premature operation,—the persons having died in the same season of the year, and within a few days of each other.

A wild superstition formerly existed in Eastern Europe, and is said still to prevail in Wallachia, to the effect that the bodies in which putrefaction was thus retarded were nourished and preserved by sucking the blood of the living, and to this the name of *vampyrism* was given. As a mere effect of panic, the prevalence of this popular belief led to numerous deaths: those who died were hastily buried, and the bodies of suspected persons were disinterred, and, if found undecomposed, were staked or burned! Dr. Herbert Mayo, in a remarkable work lately published(*a*), although he has shown the absurdity of this superstition, has suggested an explanation, which, however, is likely to excite in many of his readers a fear of premature interment. His conclusion is: "That the bodies which were found in the so-called vampyre-state, instead of being in a new or mystical condition, were simply alive in the common way, or *had been so for some time subsequently to their interment;* that, in short, they were the bodies of persons who had been buried alive, and whose life, where it yet lingered, was finally extinguished through the ignorance and barbarity of those who disinterred them." Such a statement, proceeding from one who has attained a high rank as a physiologist, is certainly calculated to excite our surprise. The cases which the writer quotes refer to the bodies of persons exhumed after having been buried for periods varying from *six* to *twelve weeks!* Can any physiologist seriously believe that a human body can preserve its vitality when screwed down in a coffin and buried in a grave for a period of six weeks? If not, what is the meaning of such bodies being "simply alive in the common way?" The hypothesis that they had been alive for some time subsequently to interment is equally untenable; for, unless vitality continued to within a few days of exhumation, we should still have to account for the

(*a*) Letters on the Truths contained in Popular Superstitions.

absence of the signs of putrefaction. Admitting the fact that a person may be suffocated in his coffin, this would not explain why his body should resist the ordinary chemical changes which, sooner or later, invariably follow death. "Death-trance" (according to Dr. H. Mayo) "is, however, a positive status: a period of repose, the duration of which is sometimes definite and predetermined, although unknown. Thus the patient, the term of the death-trance having expired, occasionally suddenly wakes, entirely and at once restored. Oftener, however, the machinery which has been stopped seems to require to be jogged, then it goes on again. The basis of death-trance is *suspension of the action of the heart*, and of *the breathing*, and of *voluntary motion;* generally, likewise, feeling and intelligence, and the vegetative changes in the body, are suspended. With these phenomena is joined loss of external warmth, so *that the usual evidence of life is gone.*"—p. 34. It appears clearly from this statement that the author makes no distinction between life and death. All the phenomena of life may have ceased; and yet, if from any circumstances the decomposition of the body has been retarded, it may be contended that the person is not dead but in a death-trance. Dr. H. Mayo has, it appears to me, overlooked a simple explanation of these cases, which would render the adoption of his hypothesis unnecessary. If, as in the case of the youth at Bristol, there is no tendency to rapid decomposition, and the body be buried within twenty-four or thirty-six hours, it will remain unchanged in the coffin for a considerable period; for by the act of interment it is withdrawn from the air and kept at a cool and uniform temperature. In all interments which take place during the winter season the bodies remain for a long period unchanged in the grave. This would be the vampyre-state of the Wallachians, or the death-trance of Dr. H. Mayo. It is strange that some philosophers will thus pass over simple facts, in order to give a mystical and alarming interpretation to plain natural phenomena; but when it is roundly asserted that the continuance of life in a human body is compatible with arrested circulation and respiration, with a cessation of voluntary motion, feeling, and intelligence, and a loss of (external) warmth, it is only a slight additional step to adopt any hypothesis which partakes of a marvellous character. It is a mere quibble about words: that which Dr. H. Mayo calls death-trance is what is understood as death by all other physiologists. The entire absence of the ordinary signs of life is insufficient, according to Dr. H. Mayo, to prove the absence of life,—a proposition which may be granted in reference to a few hours of time; but it would be unreasonable to adopt the writer's rule, and judge of death by the absence of *one* sign only, instead of taking them in their totality, and in their ordinary sequence. Premature interment is a condition which need not be dreaded in this country, where every necessary precaution is taken even with the corpse of the unclaimed pauper; and it is to be regretted that otherwise well-informed professional men should strive to keep alive a groundless fear in the public mind by their want of attention to the curious exceptions to which experience shows the process of putrefaction to be liable.—*Medical Gazette*, January 4, 1850.

Case of Hernia strangulated within the Abdomen, and remedied by Operation. By James Syme, Esq., Professor of Clinical Surgery, in the University of Edinburgh.

The reduction into the abdomen of a hernial sac, with its contents in a state of strangulation, is an occurrence so rare in the practice of surgery, that systematic teachers and writers generally seem to regard it as a subject hardly deserving of their notice. Mr. Teale, of Leeds, in his excellent work on hernia, has collected and presented in a tabular view all the cases of this kind which have been recorded by Arnaud, Dupuytren, and, more recently, Mr. Luke, of London, from which it appears that the only instances of an operation performed with success, under such circumstances, in Great Britain, are one recorded by the last-mentioned gentleman, and another by Mr. Wade. I have several times been asked to see patients on the point of sinking under the effects of this "reduction in mass," as it is termed by the French surgeons; and on two occasions have had an opportunity of examining the parts concerned, after death. The stricture caused by the neck of the sac was then so obviously the cause of death, and might have been so easily remedied by incision, that the non-performance of an operation within due time seemed matter of deep regret, and suggested as an imperative duty to operate whenever the grounds of suspicion should warrant this proceeding.

Upon the 13th of October last, I was asked by Mr. Sidey and Dr. Newbigging to see a patient, who appeared to be suffering from an internal strangulation of the bowel. He was a man about fifty years of age, the butler of a family in town; stout in frame, and rather corpulent. For eleven years he had been troubled by an inguinal hernia of the right side, and worn a truss to prevent its protrusion, until the last six weeks, during which he had not observed any swelling, although the bandage had not been used, in consequence of five months having elapsed without any appearance of it. At twelve o'clock of the proceding night he had suddenly felt very ill, and sent for Mr. Sidey, who saw him at one o'clock in the morning, complaining of intense abdominal pain, with quick pulse, cold perspiration, and vomiting. Upon careful examination, a tumour, about the size of a hen's egg, was felt in the right iliac region, without any external enlargement or thickening of the parietes of the cavity. Leeches were applied, and several injections administered during the night, with some palliation, but no material alteration, of the symptoms; which continued much the same as they have been described, until we met about two o'clock in the afternoon, fourteen hours from the commencement of the attack.

As there could be no doubt that strangulation of the bowel existed, we examined the suspected region with all the care in our power, but, probably from the abdomen having become more distended, without being able to detect the tumour which had been felt the night before. All that we could perceive was a slight degree of induration or resistance, opposite the internal ring, over a space

not much larger than the point of a finger. In these circumstances I should not have felt justified in undertaking any operation, unless Mr. Sidey's accuracy of observation had been well known to me, and, in absence of any positive information that could be obtained at the time of our examination, rendered his detection of a tumour in the first instance sufficient ground for surgical interference.

Having placed the patient in a convenient position, I made a free incision of the integuments throughout the whole extent of the inguinal canal, tied the superficial epigastric artery, which had been cut, inserted my finger through the external ring, and, guiding upon it a probe-pointed curved bistoury, divided the aponeurosis of the external oblique, up to the internal opening for the cord. There being still no appearance of a tumour, but a more distinct feeling of resistance, I divided the other coverings of the cord, and brought into view a dark-coloured mass, at the internal ring. Pulling this toward me, I readily drew out a hernial sac, about the size of a hen's egg, which, being opened, was found to contain a portion of the small intestine. Searching for the stricture, I encountered a difficulty from the sac yielding to the slightest pressure, and returning with its contents into the abdomen. I, therefore, seized it with a pair of forceps, and thus obtained the requisite tension, until I succeeded in passing the edge of my nail beyond the stricture, and guiding the bistoury upon it, effected the dilatation necessary for accomplishing reduction of the strangulated part. The patient was speedily relieved from all his distress; and, although a very unfavourable subject for any operation, through the kind and judicious management of Mr. Sidey, recovered completely, and is now quite well.

There seems to be considerable difficulty in satisfactorily accounting for the strangulation. It was evidently caused by the neck of the sac; but whether the hernial pouch had remained empty until the symptoms were produced by the entrance of intestine, or whether the contents had previously been in a state of incarceration, is a question that admits a difference of opinion. Mr. Sidey informs me that, about three weeks before the operation, the patient suffered for two or three days from colic pains, but not of such a character as to suggest the suspicion of hernia; and the stricture was so extremely tight that I can hardly suppose the intestine could have been imprisoned, without affording signs of being so.

This case will, I trust, afford encouragement to operate for the remedy of hernial tumours, reduced in a state of strangulation; and may also be regarded as possessing some interest from being, so far as I know, the only instance of recovery from a hernia which has become strangulated within the abdomen.—*Monthly Journal of Medical Science*, January, 1850.

MEMOIR OF THE LATE SAMUEL SMITH THOMSON, M. D., OF BELFAST(*a*).

The death of Dr. Thomson makes the fourth which has taken place among the physicians of Belfast within the last five years, the social rank and distinguished professional attainments of each of whom greatly adorned and added to the fame and celebrity of the metropolis of Ulster. This list of departed professional excellence, in addition to the subject of this memoir, embraces the names of Dr. M'Donnell(*b*), Dr. Sanders(*c*), and Dr. Forsythe(*d*), all of whom, with the exception of Dr. Sanders, had exceeded man's usually limited pilgrimage here below, of "threescore years and ten." But he was cut down in the very flower of his days, and just as he was making the most rapid strides to professional eminence, having already achieved an almost enviable fame in the sight of his brethren and fellow-citizens: this was well exemplified by the monument(*e*) erected to his memory, by his medical brethren and public friends, in the new burying-ground, Belfast(*f*).

Samuel Smith Thomson, whose name is so interwoven with all that is "true, and honest, and just, and lovely, and of good report," that it will not easily be forgotten in the town and neighbourhood of his adoption, was born in Coleraine in May, 1778, and died on the 30th of April, 1849. The immediate cause of his death was bronchitis, to attacks of which he had been very subject for a number of years, but which were always easily removed, until the last, which, notwithstanding the most prompt and energetic treatment, could not be controlled, congestion of the lungs supervening, and a fatal issue being the result, on the fifth day from the period of the

(*a*) We are indebted for this memoir to Dr. R. Stewart, resident physician of the Belfast District Lunatic Asylum, to which the late Dr. Thomson was for so many years visiting physician.

(*b*) Died 5th April, 1845, aged 82. (*c*) Died 26th July, 1846, aged 32.

(*d*) Died 12th June, 1849, aged 93.

(*e*) The following is a copy of the inscription on the monumental tablet erected to his memory:

"James Maxwell Sanders, M. D.
"Born 24th April, 1814.
"Died 26th July, 1846.

"Erected by a number of his friends, *many of them his professional brethren*, to whom he was greatly endeared by the amiability and benevolence of his disposition, the integrity and purity of his life, the advantages of a liberal education, and the highest professional attainments.

"*The righteous shall be in everlasting remembrance.*"

(*f*) We cannot avoid adding our testimony to the general loss which the early death of Dr. Sanders was to the profession. His friend and fellow-student, we enjoyed an intimate acquaintance with him for some years, and we can truly say that he was equally endeared to those who then knew him by his gentleness and kindness of disposition, as he was admired for his talents.—[Ed.]

attack, immediately before which the deceased had been in the full enjoyment of his usual excellent health and spirits.

Dr. Thomson was of the middle stature, and of a full habit of body, but remarkably active in all his movements. He had a more than ordinarily well-developed cerebral organization, a quick, penetrating, intelligent blue eye, florid complexion, and a remarkably kind and benevolent expression of countenance; of great affability and suavity of manner; in truth the finished and polished gentleman, incapable of giving offence, and, if offended, most readily and easily appeased.

His conversational powers were at once varied and of the highest and most agreeable order; his tastes pure and refined; a great, indeed it might be said an enthusiastic lover of music, vocal and instrumental. He was an excellent performer on the violin, having an admirable ear, and regularly enacted his part at the concerts of the Belfast Anacreontic Society, of which he was the founder and president. The Music Hall of Belfast, a very conspicuous and ornamental building, in one of the leading private streets of the town, was erected chiefly through his great and influential exertions.

His father was James Thomson, a highly respectable surgeon and eminent practitioner in Coleraine, county Derry, a man who was naturally gifted with a mind of great power, which was both well cultivated and well balanced. He had ten children, two sons and eight daughters, Samuel Smith being the youngest of the whole family. The eldest child, an unmarried daughter, lived to the advanced age of eighty-eight years, having died about six months since, in Belfast, retaining all her faculties perfect to the last.

The early education of Dr. Thomson was conducted by his father, and finished under the roof of a Presbyterian minister, with whom he resided as a member of the family. His medical studies commenced by his being bound apprentice to his father. In due season he went to Edinburgh, attending regularly at that celebrated university until he had completed his curriculum, when he immediately went in for his examination, obtaining his degree of M. D. in 1800. Shortly after this he came to Belfast, to settle as a private practitioner, where, after remaining for a few years, he went to Magherafelt, in the county of Derry; but soon leaving it, he returned to Belfast in 1805, which he never afterwards left, thus being nearly half a century actively engaged as a practising physician amongst its inhabitants. He was greatly interested in the establishment of the Belfast Fever Hospital, now entitled the General Hospital; and in 1817, when typhus fever broke out so malignantly, and spread so fearfully and fatally, he was night and day in attendance on the suffering poor, not thinking at all of self or of personal risk, but heroically combating with the dire pestilence which was decimating the land; and this so successfully, with such unremitting, such superhuman efforts in fact, that, when the epidemic had ceased, his fellow-citizens presented him with a most complimentary address, accompanied by a splendid service of plate.

During a period of five-and-twenty years, Dr. Thomson continued one of the attending physicians of the above hospital, when, owing to his extensive private engagements, arising from a rapidly increasing practice, he retired with honours not less numerous than deserved; he still, however, remained in official connexion with it as one of its consulting physicians, the duties of which he performed until his death, always taking a warm and lively interest in everything that concerned its welfare and good working, and of which the most ample proof was given by his leaving it a legacy of £100, and this too not more than a couple of hours preceding his dissolution, thus showing how vividly its prosperity was on his mind, and how clear, collected, and benevolent the intellect of this highly gifted and distinguished man was to the very last moment of his honourable and exemplary existence(*a*). The only other public medical institution with which Dr. Thomson was professionally connected was the Belfast District Lunatic Asylum, to which he was appointed the visiting physician in 1837, in succession to the late Dr. James M'Donnell, who retired from this office, owing to the infirmities necessarily attendant upon his then very advanced age. This appointment he held until his death, and in what manner, the annexed official document, as published in the local newspapers, will show sufficiently:

"At a meeting of the Governors of the Belfast District Lunatic Asylum, held on Monday, the 7th of May, 1849, the Right Rev. Bishop Denvir in the chair, it was unanimously resolved,—'That this Board, deeply lamenting the sudden removal of their late visiting Physician, Dr. Samuel Smith Thomson, deem it their duty to record their cordial esteem for his most estimable character as a man, their due appreciation of his distinguished attainments as a medical practitioner, and, above all, their grateful remembrance of his eminently judicious, humane, faithful, and efficient services, during the last twelve years, as the visiting medical officer of this asylum.'"

Before proceeding further with this brief memoir of Dr. Thomson, the relation in which he stood, and the conduct he invariably pursued towards his professional brethren, must be alluded to. And here it may be truly stated, that we come to one of the brightest and purest gems in his character, for if ever there was an upright

(*a*) At the first meeting of the committee of the hospital after his death, the following resolution was passed:

"That this Committee have heard with the deepest regret the melancholy intelligence of the death of Dr. S. S. Thompson, consulting physician to the Hospital, one of the earliest and most efficient promoters of this charity, to whose interests he so long and so ably devoted the best years of his professional life. As a slight but sincere tribute of respect for his memory, this Committee beg to express, in the most especial manner, their unfeigned sorrow at his sudden removal, and tender their cordial sympathy and condolence to his sorrowing relations.

"(Signed) ANDREW MULHOLLAND, *Chairman.*"

man, acting with the fullest integrity and singleness of heart and purpose, and uninfluenced by the mean and petty jealousies which unhappily are so rife amongst professional men, that man was Dr. Thomson. His family motto significantly enough was, "Honesty is the best policy," a motto which he handed down to his relations, not merely unsullied, but rendered all the purer and made to shine forth in still more refulgent colours by his whole manner of life, which was pre-eminently that of the "noblest work of God" —an honest man.

From a very early period in his professional life, he stood forth the resolute, vigorous, and uncompromising champion of the rights and privileges, the honour and station, of his brethren. He invariably espoused the cause of the juniors in particular, having never ceased to preach that the medical labourer was worthy of his hire; and he ultimately succeeded, after many years of local battling, and no small animosity and factious opposition, in having the principle carried, that the medical attendants of the General Dispensary in Belfast should be paid regular and fixed salaries. This principle is now fully recognised in Belfast, thanks to Dr. Thomson's exertions for its accomplishment. For his able and distinguished advocacy of his brethren at all times, and his exalted professional conduct generally towards them, he was presented, in 1834, with a massive and splendid gold snuff-box, on which were engraved the names of the donors, thirty-six in number, of all branches of the profession; a gift which the lamented deceased prized, as it may be supposed, in no small degree. Having lately been referring to Dr. Cheyne's very interesting "Autobiographical Sketch," we were forcibly struck with the following extract, as very applicable in many respects to Dr. Thomson:

"I endeavoured to become acquainted with the characters of those who moved in the highest rank in the profession, and to discover the causes of their success; and I ascertained that, although a man might acquire popularity by various means, he could not reckon upon preserving public favour unless he possessed the respect of his own profession; that if he would effectually guard his own interests, he must in the first place attend to the interests of others; hence I was led carefully to study and liberally to construe that part of medical ethics which regulates the conduct of physicians towards each other."—*Essays by John Cheyne, M. D.*, p. 8.

The high opinion held of the late Dr. Cheyne by every branch of the medical profession in Dublin, is perfectly within our own recollection and observation, one and all of whom, junior as well as senior, respected, nay loved him, knowing that he was a man in whom the most implicit confidence could be placed at all times and under all circumstances. Such a man, also, was the late Dr. Thomson, the members of his profession, from the oldest to the youngest, almost venerating him, for his exalted virtues and strict integrity, as shown in all his intercourse with them, to say nothing of the high estimation in which they held his professional talents

and other varied and ennobling acquirements. This confidence in and opinion of Dr. Thomson was never lost by his brethren,—sons, rather, we should say, for he had been for years past, with one consent, the father of the profession in Belfast, and as such his death was felt by the whole profession, who, without an exception, attended his unprecedentedly crowded funeral, walking in the procession as mourners; and in order further to prove their great love and esteem for him, and as only a fitting mark of respect for his memory, and desire to perpetuate it, they, in their capacity as the Medical Society, have resolved that a marble bust of their "beloved and esteemed" chief shall be placed in their library, or in the hall of the general hospital; and further have placed on record their deep regret for his removal from amongst them by passing the following resolution at their meeting on the 7th May, 1849.

"That this Society begs to record its deep sorrow in the lamented decease of Dr. Samuel Smith Thomson, one of its oldest members,—a gentleman at the time of his death holding the distinguished position of head of the medical body here, a place to which he was most justly entitled, not only from his sincerity, but also from his skill, worth, and integrity, and kindness and urbanity to his juniors; and especially from his untiring zeal for, and the unswerving firmness with which he ever upheld the honour and interests of the profession; and that a letter, signed by the Chairman and Secretary, be written to his relatives, expressive of these sentiments, and respectfully offering the condolence and sympathy of this Society on their melancholy bereavement."

The deceased was very liberal in his charities; his purse-strings were never closed against want or distress in any form, but freely opened to afford relief. The branch of the Medical Benevolent Fund Society established in Belfast in 1843, he supported from the first, and was unanimously elected its perpetual president(*a*). No practitioner could have been more liberal in giving the benefit of his professional services gratuitously to those whose circumstances were limited; perhaps, indeed, he went to the extreme of liberality in this respect, his benevolence thus being unbounded, and meted out, too, in such a manner as to do away with all embarrassment on the part of the recipients thereof. All praise was his due for this, and he received his reward by enjoying a highly lucrative practice for a number of years; in fact, latterly he was compelled to limit

(*a*) "Belfast Branch of the Medical Benevolent Fund Society of Ireland. At a quarterly meeting, held in the Library Room of the Medical Society, on Monday, May 7th, 1849, Robert Stephenson, Esq., M.D., in the chair: resolved unanimously, that it is with feelings of the most unfeigned regret we have heard of the death of our late highly-esteemed and respected president, Dr. S. S. Thomson, whose unceasing and disinterested attention to the welfare of the society, since its foundation in 1843, added so justly to the lustre of his character for active benevolence, and true sympathy for the wants of others, and now demands from us the expression of our greatest sorrow and concern for the heavy loss which we have sustained by his sudden removal."

considerably his professional engagements, so extensive had they become, and only to attend in consultation, except in the case of patients with whom he had been since the days of their youth connected, not merely as medical adviser, but as a counsellor and friend.

Dr. Thomson never published any contribution to medical literature that we are aware of; not but that he had both material and ability to do so in the best and most attractive garb if he had pleased, for not only professionally was Dr. Thomson thoroughly educated and experienced, but he was also an accomplished scholar, with a mind well stored both with classical and general knowledge; he, however, had not the inclination, or rather his modesty prevented him, having not alone an utter aversion to appear in print, but to write anything more in ordinary than he could well avoid.

In politics Dr. Thomson was a Whig, but never appeared in public as a politician, thus evidencing that plain, common-sense wisdom with which he was so largely gifted.

Having now touched, however imperfectly, on some of the chief phases in the remarkably even tenor of a lengthened existence, such as Dr. Thomson's, it only remains to observe, that it was in the family circle, amongst his own immediate relations and intimate friends, that he especially appeared in his true character of kindness and beneficence.

Though Dr. Thomson never married, yet from a very early period he took upon himself all the responsibilities and engagements of a parent, by adopting two nephews, the sons of a deceased sister, both of whom (one being married and having a large family) continued to reside with him till death separated a tie which was made all the more precious and dear from its long and unbroken continuance of unmixed happiness.

The deceased was a truly religious man, a diligent and earnest student of his Bible, and most exemplary as a regular attendant on all the ordinances of public worship. He ever abhorred whatever tended in the most remote degree to put a slight on things sacred, and not less so did he detest hypocrisy in any shape. Living the life he did, he met death with the utmost resignation and composure. Its certain approach he plainly foresaw, having it fully impressed on his mind that he could not recover, owing to the severity of the attack with which, in the providence of God, he had been so suddenly and fatally seized. Speaking on the subject to a dear friend two days before he died, he observed, "I have been long prepared for this, and my trust is entirely on the merits of my Redeemer." To the last moment he continued perfectly conscious and collected, and within a few hours of his dissolution, he, whilst his medical friends were visiting him, recounted over the whole treatment which had been pursued, observing, at the same time, that but for the distress which he suffered in speaking, he felt as fully competent then, as at any period of his life, to discuss any professional question. But we must draw this memoir to a close,

and in doing so we cannot conclude it better than by quoting the following extract from the feeling letter of the chairman (S. Brown, Esq., R. N.) and the Secretary (Æ. Lamont, Esq., F. R. C. S. I.), of the Belfast Medical Society(*a*), in officially communicating to the family of the deceased the resolution of that body, on occasion of death of their honoured and much deplored relative.

"In conveying to you the resolution, we feel that we but feebly express the united sentiments of the medical body here when we say, that in the demise of Dr. Thomson, not only has the profession sustained an irreparable loss, but the entire community have reason to deplore the removal of one who was an ornament to society; kind, gentle and unassuming; charitable from innate feelings of benevolence, and generous without ostentation. Long shall the many families of which he was the respected friend and trusted counsellor, long shall the various public bodies with which he was connected, and in which he was so highly esteemed, feel that by his death a sad void has occurred in the private and social circle, a vacancy not to be easily filled up in those associations where he was ever active in the cause of charity, or lending himself to promote, in delightful moments of relaxation, that kindly intercourse which softens, improves, and elevates the human heart."

(*a*) We may here mention that this society has received a valuable addition to their library, through the liberality of Dr. Thomson's executors, as the following letter will show:

"*Belfast, 15th September*, 1849.

"Dear Sir,—At the late monthly meeting of the Belfast Medical Society I was directed to acknowledge the receipt of your most liberal and valuable present of books (above 800 volumes), being the medical portion of the late Dr. Thomson's library, and to thank you most sincerely for the kind consideration and generous feeling which prompted you to put in possession of the Society so valuable and appropriate a memorial of one, whom every member of it revered as a parent, and valued as a friend.

"Accept, therefore, dear Sir, the thanks of the Society, cordially and gratefully tendered, and believe me, your's most faithfully,

"Æ. Lamont, F. R. C. S. I.,
"*Secretary.*

"*To James Bristow, Esq., Belfast.*"

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 6.

Fig. 5.

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*Observations upon the "Warty Ulcer of Marjolin."* By ROBERT W. SMITH, M.D., M.R.I.A., F.R.C.S., Surgeon to the Richmond Hospital, Professor of Surgery in the University of Dublin, Secretary to the Pathological Society of Dublin, Fellow of the Royal Medico-Chirurgical Society of London, &c.

THERE is a remarkable form of ulceration that attacks the tissue of cicatrices especially, a brief account of which I submitted to the consideration of the members, at a meeting of the Surgical Society of Ireland, in April, 1844, under the title of the "fibrous ulcer." It has, however, appeared to me, upon subsequent consideration, that this appellation is calculated to convey an inaccurate idea of the nature and structure of this peculiar ulcer. I have, therefore, abandoned it upon the present occasion, and have retained the name of "warty ulcer," assigned to the disease by Marjolin, who described the affec-

tion in 1828, in the twenty-first volume of the "*Dictionnaire de Médecine.*"

Mr. Cæsar Hawkins has also given an account of the disease, under the title of "warty tumours of cicatrices" in the nineteenth volume of the Medico-Chirurgical Transactions, published in 1835; he does not, however, allude to Marjolin's description of the ulcer, but expressly says that he is not aware that the disease has been "described in any surgical writings." It is true that Mr. Hawkins speaks of the ulcer as a disease of cicatrices, while Marjolin does not allude to any such connexion; but when we compare with each other the descriptions given by these two authors, it will, I think, be admitted, that the "warty ulcer of Marjolin" and the "warty tumours of cicatrices" of Hawkins are the same disease.

This peculiar and intractable ulcer attacks the tissue of cicatrices, in the great majority of cases, although not invariably. The nature of the original lesion of the skin does not appear to exert much influence upon the occurrence of the subsequent morbid changes, for the ulcer establishes itself with equal frequency in the cicatrices of lacerated wounds, or severe burns or scalds; and numerous examples of it have occurred among soldiers who had received severe floggings. In general, it does not appear until the cicatrix has existed for years, and its progress, when once formed, is usually singularly slow.

As regards the mode of commencement of the disease, it not unfrequently happens that the cicatrix resulting from the original injury is attacked with ulceration, heals, and again ulcerates, the ulcer presenting no remarkable or peculiar character. This may occur repeatedly before the "warty ulcer" is established, but when the latter is once formed there is an end to every process of reparation, although so slow and gradual is the increase of the sore that a very long period frequently elapses before the attention of the patient is sufficiently attracted to it, to induce him to seek for professional assistance. Yet, although gradual, the progress of the disease is sure and

steady; and the ulcer enlarges, not only by its circumference, but also becomes deeper, and engages all the subjacent tissues, until at length, if the disease is situated over a superficial bone, the periosteum becomes implicated, and ultimately the bone itself is absorbed, and fracture is frequently the result of the destruction of the osseous structure.

It is not the general character of the disease to contaminate the lymphatic glands; they frequently become sympathetically enlarged, but I have seen them assume the characters which mark cancerous degeneration in two instances.

The following table, drawn up from the cases published by Mr. Hawkins, from those which I have myself observed, and from other sources, shows the period which elapsed between the receipt of the injury and the formation of the ulcer, as well as the nature of the original injury from which the cicatrix resulted.

NO.	PERIOD AFTER INJURY.	ORIGINAL INJURY.
1	Eleven years,	Flogging.
2	Twenty-seven years,	Flogging.
3	Twenty years,	Scald of the leg and foot.
4	Twelve years,	Wound of the heel, through the tendo Achillis.
5	Twenty-seven years,	Blow on the shin from an anchor.
6	Several years,	Gunshot wound.
7	Sixteen years,	Burn of the back.
8	Several years,	Burn of the fore-arm.
9	Eight years,	Lacerated wound of the leg.
10	Five years,	Lacerated wound of the great toe.
11	Thirty-seven years,	Lacerated wound of the leg.
12	Sixty-one years,	Burn of the leg and thigh.
13	Several years,	Lacerated wound.
14	Twenty-five years,	Contused wound of the leg.
15	Twenty-five years,	Burn of the foot.
16	Eight years,	Flogging.
17	Several years,	Flogging.
18	Several years,	Burn.
19	Several years,	Burn.
20	Fourteen years,	Lacerated wound of the leg.

The formation of the ulcer is frequently preceded by the appearance in some part of the cicatrix of a small, hard, circular tumour, resembling a wart, the surface of which is smooth, and covered by the layer of cuticle which invests the whole of the cicatrix. This small tumour remains free from ulceration and devoid of pain for a variable period of time; and several such tumours may form before the process of ulceration begins. This is not, however, always the case, for in some examples of the disease, the cicatrix presents spots of ulceration, which gradually coalesce, and secrete a thin unhealthy matter. By slow degrees the ulcer enlarges, generally, however, confining itself within the limits of the original cicatrix. Its surface presents a very unhealthy aspect, being in some instances covered with elevations resembling the granulations of a cancerous ulcer; while in other cases, there is no appearance of granulations, but the surface of the ulcer is formed of a number of fibres, of a whitish yellow colour, with a dense, but at the same time somewhat brittle texture, rising above the level of and perpendicular to the surrounding integument, and approximated to each other as closely as possible.

This singular arrangement also exists when the ulcer presents a granulated surface, the seeming granulations, upon close examination, being found to be composed of a collection of these fibres, which are parallel to one another, and perpendicular to the surface from which they spring. They can be easily separated from each other by the point of a probe, the intervals between them being distinguished by well-marked fissures, to the bottom of which an ordinary sized probe can be readily passed. Over the surface of the ulcer is seen scattered a number of small specks of a light yellow colour; these are the extremities of the fibres, tipped with a tenacious purulent secretion. The discharge is thin, purulent, frequently offensive, and occasionally streaked with blood; the pain, at first slight, becomes gradually more severe and more

constant; and a slight degree of hectic fever sometimes shows itself in the most advanced stages of the disease.

The integument surrounding the ulcer is in many instances diseased to a greater or less extent, being frequently studded with small wart-like tumours; it is thickened and divided by fissures, terminating in the circumference of the ulcer, which gradually spreads over the whole of the diseased integument; a fresh portion of the skin then becomes the seat of the same morbid process, and assumes the same warty and fissured appearance, preparing the way, as it were, for the spreading of the sore, which may thus attain a very great size, increasing by its circumference and also becoming deeper by engaging the subjacent fascia, and when seated over a superficial bone, implicating the osseous tissue, producing fracture by absorption, as already mentioned.

Where the ulcer presents a granular surface, it closely resembles that of carcinoma; the granulations are large, firm, round, and liable to bleed when touched; the intervals between them are deep, presenting a foul, yellow or greenish aspect; the discharge is offensive, sloughing frequently attacks and destroys the entire surface, and when this process has ceased, the ulcer gradually resumes its tuberculated or warty aspect.

When from the commencement the ulcer presents the peculiar arrangement of fibres already described, this sloughing process is not so liable to occur, but the discharge is unhealthy, and the surrounding integument is similarly affected, presenting the same fissured aspect near the margin of the ulcer, with here and there a few small wart-like elevations.

It appears to be essentially a dermoid affection, for although after the lapse of a longer or shorter period it engages the subjacent fibrous structure, the latter does not seem to be the original seat of the morbid action of which this remarkable ulcer is the result. I do not think we are as yet in possession of any evidence to prove the origin of the morbid growth in question

from fascia or any of the natural fibrous tissues. Marjolin, when describing the processes which spring up from the surface of the ulcer, remarks, "ces végétations paraissent naître du derme;" and Mr. Hawkins observes that even when of very large size it is still essentially a disease of the skin. In the seventh case detailed by that gentleman, the ulcer, situated in the lumbar region, spread until it was eighteen inches in length and nearly a foot in breadth; even when of this immense size, however, the disease had not implicated the fascia of the back, and except in one or two places where the sloughing had been most severe, the cutaneous basis of the ulcer still remained. In the first case of this affection which came under my own observation, the ulcer, which was about as large as a crown-piece, and situated upon the back of the fore-arm, was excised by the late Mr. Carmichael. It had no adhesion whatever to the fascia, which presented its natural glistening aspect, and was in every respect healthy.

The following is the concise but accurate description of the ulcer given by Marjolin:

"*Ulcère Verruqueux.*—Je désigne par cette dénomination (à laquelle on en substituera une autre, si on la juge défectueuse) des ulcères, dont les auteurs n'ont pas donné une description particulière, et qui présentent les caractères, que je vais exposer.

"Leur surface est formée par une grand nombre de villosités coniques, d'une texture dense, serrée, très-rapprochées les unes des autres, représentant en quelque sorte une velours de laine grossier; ces végétations paraissent naître du derme; l'épiderme qui entoure l'ulcère est épaissi, calleux et même corné, quelquefois divisé par des fissures profondes.

"Ces ulcères, que j'ai observés deux fois à la plante des pieds, une fois à la jambe, et une fois dans l'aine, laissent suinter en petite quantité une fluide visqueux, presque incolore, fétide, qui en se desséchant, forme un croûte épaisse, dure, grisâ-

tre, très-adhérente. Ils sont peu douloureux, ou même indolens, susceptibile de prendre une grande étendue en largeur. Cette maladie assez rare n'est pas encore bien connue"(*a*).

In this brief description, although no mention is made of the occurrence of the disease in cicatrices, I think we can easily recognise the characteristic features of the ulcer, which I have been considering in the preceding pages, such as the peculiar arrangement of the fibres, resembling that of the pile of velvet or plush, the origin of these fibres from the dermis, and the fissured condition of the integument around the ulcer. If we now turn to the account of the "warty tumours of cicatrices," as published by Mr. Cæsar Hawkins, I think it will be admitted that this disease is identical with the " warty ulcer" of Marjolin.

" The tumour, which I call the ' warty tumour of cicatrices,' makes its appearance in some old scar, many years after the injury which has produced it has been healed, whether a burn, a cut, or a laceration of the skin; and it arises equally from a flogging or a scald, in which the skin alone has been injured, or from a cut or gun-shot wound, which injures also the tendons or bones below the skin, and makes a more complicated cicatrix. There appears in the first place a little wart or warty tumour in the cicatrix, which is dry and covered with a thin cuticle, but which soon becomes moist and partially ulcerated, like the warts of mucous membranes, from which a thin and offensive and semi-purulent fluid is secreted. In this stage it gives no pain nor inconvenience.

" In the second stage of the disease the growth of the tumour becomes more rapid, the warty appearance being in some measure lost, a more solid substance projecting from the diseased skin, which bears much resemblance to the fungus of fungus hæmatodes(?); the formation of fresh warts being still seen around the tumour, and preceding the change which has

(*a*) *Dictionnaire de Médecine,* t. xxi, p. 46.

been alluded to. The tumour is very vascular, and bleeds when touched, but its irregular surface still allows the probe to pass through its structure, except where it is most firm."

"After the tumour has become solid and prominent, a new action takes place in it, and the tumour ulcerates and sloughs alternately, with a great deal of pain and suffering, and it is destroyed down to its basis, so as to present the appearance of a foul excavated ulcer, except in its circumference, where the skin is raised, thickened, and everted, and from time to time warts are generated, which again ulcerate and slough, till the patient becomes worn out by suffering, but without having at all the aspect of a person dying of malignant disease; and on examination of the body no disease of the absorbent glands is found, nor is there, as far as I know, any sign of malignant disease in the interior of the body"(*a*).

In the twenty-fourth volume of the First Series of this Journal, an essay was published by the late Dr. Byron, upon "Malignant Cutaneous Diseases of the Extremities and Trunk of the Body," in which, under the title of "Cutaneous Cancer arising in old Cicatrices," he details at page 55 a case which appears to me to afford a good example of the warty ulcer.

A brief notice of this remarkable ulcer, by Dr. Macpherson, civil assistant surgeon, Howrah, is given in the twenty-first volume of the London Medical Gazette, 1845. This gentleman remarks: "Verrucous tumours of cicatrices are by no means rare among the natives of Bengal. They usually occur in the cicatrices of extensive burns, or in those left by the application of the actual cautery over the spleen, a practice almost universally pursued by natives in the treatment of enlargements of that organ. They are also sometimes found in the cicatrices caused by severe flogging."

When the ulcer is situated over a superficial bone, such as the tibia, the latter generally, but at a remote period, becomes

(*a*) Medico-Chirurgical Transactions, vol. xix.

implicated in the disease (Fig. 2), although the appearances which it presents are by no means uniform. In some instances the medullary canal is opened into by the gradual absorption of the compact structure, without any preceding hypertrophy of the osseous tissue; while, in other examples of the disease, the bone becomes greatly hypertrophied, and acquires an extraordinary degree of density; nor is this enlargement always limited to that portion of the bone immediately subjacent to the ulcer, but in some instances extends to a considerable distance along the shaft.

Corresponding to the ulcer, the compact structure, even although it may have acquired an abnormal degree of density and hardness, is gradually absorbed, and the bone here presents an irregularly excavated surface, each excavation being filled by a packet of fibres, wedged together as closely as possible.

In many of these cases, the bone, although thus absorbed and excavated upon its surface, becomes hypertrophied towards the medullary canal, as it were to strengthen and preserve it against fracture. I have seen the almost complete obliteration of the medullary canal of the tibia thus accomplished, and yet fracture ultimately result.

Case I.—Dennis Boggin, aged 57, was admitted into the Richmond Hospital, in February, 1831, having a large ulcer situated upon the front of the tibia. It was the result of a lacerated wound, and had existed for five years; during this period large portions of the sore healed, but the cicatrix was subsequently attacked by ulceration, and the sore continued to enlarge slowly. At first it presented the characters of a chronic indolent ulcer of the leg, but at the period of his admission into the hospital its surface was covered with a number of firm, wart-like granulations, separated by fissures, and frequently shedding blood.

As it was found impossible to heal the ulcer, the man left the hospital after a sojourn of a few months, and did not return to it until the month of May, 1834; but during the intervening

period the disease had spread considerably, the ulcer being now upwards of six inches in length and nearly four in breadth; its centre was deeply excavated; it yielded an offensive matter of a very unhealthy character; and the tibia had been absorbed to such a degree, that twelve days before the second admission of the patient into the hospital, it broke across while he was walking.

The margin of the ulcer was irregularly studded with small, round, wart-like tumours, composed of fibres, and separated from one another by distinct fissures, many of which were fully a quarter of an inch in depth. The veins of the leg were enlarged as far as the knee-joint, and lancinating pains extended from the ulcer to the groin, where the glands were enlarged, painful, and hard. The patient's health was now much impaired, his strength gone and his sleep broken; his countenance was sallow, and his whole aspect evinced great depression.

The limb was amputated above the knee-joint, but shortly afterwards the patient was attacked with cough; dyspnœa and purulent expectoration then succeeded; diarrhœa of an obstinate character and accompanied by severe pain in the umbilical region followed; and the case terminated fatally upon the fourteenth day after the operation had been performed.

The amputated limb was minutely inspected, and a vertical section then made through the centre of the tibia and of the ulcer. The bone was found to be immensely hypertrophied, the enlargement not being confined to the situation of the ulcer, but extending at least two inches both above and below it; neither was it limited to the front of the bone, but affected its entire circumference. In the vicinity of the fracture the compact tissue was half an inch in thickness, and the medullary canal so encroached upon as to be nearly obliterated.

Corresponding to the central and deepest portion of the ulcer, nearly two inches of the tibia were altogether destroyed, and the end of each fragment had become smooth, rounded, and conical. The intervening space was filled up by the mor-

bid structure composing the ulcer, the white fibres of which, arranged in parallel lines and at right angles with the axis of the limb, reached nearly to the deep fascia of the back of the leg.

The intestinal mucous membrane was vascular in a high degree, and the lungs presented the anatomical characters of the third stage of pneumonia. The inguinal lymphatic glands, as already mentioned, were enlarged, and their section exhibited the white colour, the dense structure, and the fibrous aspect so constantly observed in scirrhous degenerations.

Case II.—Richard Carty, æt. 58, was admitted into the Richmond Hospital under the care of Dr. Hutton, with a large warty ulcer, situated over the lower third of the front of the tibia. He stated that about thirty-seven years ago a cable had been violently dragged across the front of his leg, lacerating the skin and producing a large ulcer, which, maintained in an irritable condition by the intemperate habits of the patient, remained without healing for twelve months. At the expiration of this period it healed, but continued so for only six months. It alternately healed and ulcerated about ten times during a period of thirty years. The last attack of ulceration occurred about four years before his admission into the hospital, and the patient has been gradually losing the use of the limb.

When he was admitted the leg and thigh were observed to be much wasted, and the heel retracted: the ulcer was about four inches in length, of a light pink colour, and very painful. There was a thin, offensive discharge from the surface of the sore, which presented a singular appearance, being composed of the extremities of fibres which had sprung up from the bottom of the ulcer, at right angles with the plane of the leg, parallel to each other, and collected into small wart-like tumours, with intervening deep and well-marked fissures. The fibres were, however, quite distinct from one another, and easily separable by the point of a fine probe, while the fissures admitted of the introduction of an ordinary-sized probe down to

the bottom of the ulcer. Of late there had been frequent bleedings from the surface, and stinging pains, especially severe at night.

After some time fruitlessly employed in giving a trial to a great variety of local applications, the limb was amputated; the case, however, proceeded unfavourably ; abscesses formed in the stump, diarrhœa of a most obstinate character set in, and the patient died within two months after the performance of the operation.

The examination of the amputated limb showed that the compact structure of the tibia, which had been in contact with the fibres of the ulcer, was totally removed, the medullary canal exposed, and its cells infiltrated with purulent matter. The structure of the abnormal growth itself was exactly similar to that noticed in the preceding case. There was no morbid deposit found in any of the viscera.

Case III.—Mrs. K——, æt. 45, towards the close of the year 1835 received an injury of the great toe from a piece of timber falling upon it and tearing off the nail. A troublesome ulcer resulted, which healed and broke out again several times during a period of three years. In 1838, during a severe storm, part of the house in which she resided in the country was blown down, and a portion of the wall falling upon her foot produced a lacerated wound of the toe which had been previously injured.

The ulcer consequent upon this second lesion never healed, and in 1840 she consulted me as to the propriety of removing the part. At this period the extremity of the toe was much enlarged and of a globular form (Fig. 4); its entire surface was in a state of ulceration, and divided by deep fissures, which circumscribed a number of small wart-like tumours, of a pale pink colour, and made up of distinct, slender, and parallel fibres. The integument posterior to the ulcer also presented numerous fissures; the discharge was unhealthy; the pain was not severe while the limb was at rest, but in walking the patient suffered

considerably. There was no glandular enlargement, and her health was not impaired.

I removed the toe at its articulation with the metatarsal bone; the wound was healed in a week, and there was no recurrence of the disease. The woman died of fever about seven years after the performance of the operation. A section of the amputated part exhibited the peculiar arrangement of fibres (Fig. 5.) already described as characterizing the warty ulcer, but the distal phalanx had totally disappeared; there was no vestige remaining either of it or of the termination of the tendons of the flexor or extensor muscles of the toe.

The peculiar distribution of the fibres, which constitutes so remarkable a feature of the disease, is accurately shown in Figure 1, which represents the appearances disclosed upon making a vertical section of the morbid growth, in a case in which amputation below the knee was performed by Mr. Colles in Steevens' Hospital. The disease occurred in the cicatrix of a lacerated wound of the leg. The arrangement of the fibres in parallel lines, perpendicular to the plane of the integument, and their collection into packets separated by fissures more or less deep, are faithfully delineated.

With respect to the nature of this remarkable affection, my experience leads me to say that it is undoubtedly a form of cutaneous cancer, and to dissent from the opinion of Mr. Hawkins, that it does not "produce any contaminating influence upon the absorbent glands, and has no tendency whatever to re-appear in a distant and unconnected part of the body"(*a*).

It may not, perhaps, possess all the properties of malignant disease in such a degree as to justify us in ranking it with those formidable growths, which not only change all contiguous textures into a structure analogous to themselves, but likewise constantly contaminate the absorbent system, converting the lymphatic glands into a similar heterologous production,

(*a*) *Loc. cit.* p. 20.

and which possess a strongly marked reproductive character, exercising upon the entire system a baneful and destructive influence, manifested by the formation in remote parts, and in internal organs, of a structure similar to that of the original local disease. It may not, I say, possess *all* these attributes in a high degree, it may be "entirely local in its origin," but, nevertheless, it belongs, in my opinion, to the class of cancerous diseases, and is capable of contaminating the lymphatic glands, as is proved by the first case which I have detailed. That its removal by operation may be succeeded by the appearance of malignant growths in a distant part, the following example demonstrates.

Case IV.—A female, æt. 60, was admitted into the Richmond Hospital, under the care of the late Mr. Carmichael, for an ulcer upon the inner side of the left heel, about two inches in length, and one and a half in breadth, which had commenced to form about three years previous to her admission. She stated that for a long period there had existed, in the situation now occupied by the ulcer, a horny elevation somewhat resembling a corn, which she was in the habit of paring from time to time, whenever the pressure of her shoe rendered it uneasy.

About three years before she presented herself at the hospital, it began to become painful, and soon afterwards small warty-looking growths sprung up from its surface, slowly extended themselves, and yielded a thin unhealthy discharge. By slow degrees the ulcer enlarged, until it attained the size represented in Figure 3, and gradually assumed the appearances described in the preceding pages, as characteristic of the "warty ulcer" of Marjolin. The patient then applied for advice to Mr. Adams, who, believing the disease to be of a malignant nature, declined performing any operation for its removal, although at this period the woman's aspect was healthy, and there was no glandular enlargement to be detected either in the groin or elsewhere.

A few months subsequently she was admitted into the hos-

pital, under the care of Mr. Carmichael; in the mean time, the ulcer had ceased to enlarge by its circumference, but had become more painful, and the fibres of which the wart-like tumours were composed, had grown exuberantly, being in some parts of the surface of the sore fully half an inch in length, and so delicate as to bend by their own weight: they were of a light yellow colour, and from the fissures at their roots there issued an offensive discharge.

The whole of the morbid structure, with a portion of the surrounding integument, was excised, and the exposed surface, which bled profusely, was cauterized. During the healing of the wound, which was of course tedious, nothing remarkable occurred; and when cicatrization was completed, the woman left the hospital, and resumed her usual occupations.

About eight months, however, after the performance of the operation, she was re-admitted with a globular tumour in the left groin, of the size of a small orange, the malignant character of which was evident. It was the seat of frequent attacks of lancinating pain; the integument which covered it had assumed a dusky red colour; enlarged veins ramified over its surface, and it was highly elastic to the feel, communicating to the fingers a sense of fluctuation. Her health had now given way; she was unable to rest at night, and, from being a person of a cheerful disposition, had sunk into despondency.

After her admission, the progress of the tumour was rapid; the skin assumed a lurid aspect, became attenuated, and an opening formed, from which a fungous growth sprung up, which yielded an unhealthy discharge, and bled occasionally. Death soon followed, after which the size of the fungus diminished at least one-half. A section of the tumour exhibited the usual and well-known characters of encephaloid growths.

The question will naturally suggest itself to the mind of the reader, has the structure of the "warty ulcer" been examined in the field of the microscope? Upon two occasions, I have had the nature of the morbid growth in question carefully in-

vestigated by Dr. Lyons and by the late Dr. Houston; neither of these gentlemen, however, although practised in the use of the instrument, were able to detect the characters which modern pathologists have assigned as those of cancerous formations. Dr. Lyons stated, that the specimen which I sent to him contained no cells of any kind, nor even nuclei, and that it appeared to him be an example of the lipomatous (fibrous) formation, and totally distinct from cancer or any of the allied forms of malignant disease.

This result is, of course, opposed to the opinion which I wish to maintain, but it appears to me to be a result which, if correct, proves what is of great practical importance, namely, that a morbid growth may not possess the anatomical structure believed to be characteristic of cancer, and yet may be capable of contaminating the system through the medium of the absorbents, of re-appearing in a distant part after operation, and of destroying life in the same way as diseases confessedly malignant.

The result of my observations of this peculiar ulcer leads me, therefore, to consider it as a cancerous disease, but I agree with Mr. Hawkins in thinking that it is malignant only in the lowest degree. I infer that it is of a cancerous nature from its consisting of a new structure, which is capable of converting the surrounding integument into a similar tissue,—from its power of contaminating the lymphatic glands, as manifested in the first case which I have detailed,—and from its capability of recurring in a distant part after the removal of the original disease, as in the instance last described; but, upon the other hand, its remarkably slow progress, the number of years during which it will continue, without contaminating the system, and the extreme rarity of its re-appearance after operation, induce me to coincide in the opinion, that it is that form of cancer which, as I have before said, possesses these attributes of malignant disease in the lowest degree.

Whether this opinion be correct or otherwise, or whatever

may be the true nature of the disease, it will, I imagine, be admitted that there are but two modes of treatment likely to be attended with success; the entire of the morbid structure must either be removed by operation or destroyed by some powerful caustic; the adoption of one or other of these methods, as well as the description of operation proper to be performed, must depend upon the particular circumstances of each individual case, for in some instances the surgeon is compelled to have recourse to the severe measure of amputation, while in others the excision of the ulcer is adequate to accomplish a cure; and, again, examples of the disease occur in which the efforts of surgery are necessarily limited to attempts to destroy the morbid growth by caustic.

When the disease has attained to such a size as to render excision impossible, or where it has deeply implicated a subjacent bone, the surgeon is justified in having recourse to amputation, if the situation of the ulcer admits of it, and there is nothing in the state of the system to forbid the performance of the operation; but when the ulcer is of moderate size, has not extended to any great depth, and is so placed as to admit of excision, this mode of treatment may be adopted with a well-grounded confidence that it will prove effectual; but, before performing the operation, the surgeon should carefully examine the state of the integument around the ulcer; and should it be found to present the warty or fissured aspect already described, it should be included in the excision, otherwise the operation is not likely to be permanently successful.

Should the situation of the ulcer preclude the possibility of amputation, and its extent forbid our having recourse to excision, we must either abstain from any interference with the disease, which would probably be the more prudent course, or else attempt its destruction by caustic; but I cannot say that I have ever seen this mode of treatment productive of permanent benefit. Strong nitric acid was repeatedly applied to the ulcer represented in Figure 6, but it did not appear to induce any

salutary change. In this instance the disease occurred in the cicatrix of a lacerated wound of the leg, received thirty-five years previously.

Were I to attempt the cure of the disease by caustic, I would feel inclined to place most reliance upon the chloride of zinc, the efficacy of which in destroying cutaneous cancer has been highly extolled by Dr. Canquoin of Paris(*a*), and likewise by Dr. Ure. The pain produced by the application of this powerful caustic is of the most intense description, but, according to Dr. Ure, is in a great degree under the control of opium, and generally ceases altogether in twenty-four hours. It is employed in the form of a paste, and the advantages ascribed to it over other caustics are, that it is more active, more certain in its effects, that it produces no constitutional disturbance, that the depth of its action can be regulated, that it does not spread, and that the eschar caused by it separates early, usually in from eight to twelve days. A full account of the mode of preparing the paste, and of employing it, will be found in the seventeenth and eighteenth volumes of the London Medical Gazette, by Dr. Ure, who objects, however, to its being made as recommended by Dr. Canquoin, with wheaten flour, the vegetable albumen contained in which, by combining with the chloride, will interfere more or less with its corrosive action; he has, therefore, substituted pure anhydrous sulphate of lime, which, when mixed with the chloride of zinc and a few drops of water, forms a paste resembling putty. The plaster of Paris of the shops can seldom be procured sufficiently pure for the purpose.

(*a*) *Mémoire sur un nouveau Mode de Traitement des Affections Cancéreuses*, aris, 1835.

Art. VIII.—*On Acute Inflammation of the Prostate Gland.*

By John Hamilton, Surgeon to the Richmond Hospital.

There is no more serious complication in gonorrhœa, than inflammation of the prostate gland. The pain and frequent efforts to pass water are in the beginning very distressing, and when the swelling of the inflamed gland causes retention of urine, life may be, and often is, endangered. The following are examples of the disease.

Case I.—In January, 1850, Major B. applied to me; he has had gonorrhœa for the last few weeks, which was on the decline, though the discharge was still thick and yellow. He had used cubebs and a zinc injection, when the discharge suddenly stopped, and at the same time he experienced uneasiness about the perineum and anus, and a frequent desire to pass water, which kept him awake all night. In the day time the pain and uneasiness were so great, that he could not bear to sit still for five minutes together. On examination I found that *no pain was caused by pressure in the perineum*, but when I pressed deeply with the point of my finger just before the anus, in the direction of the prostate gland, I gave him much uneasiness. On introducing my finger into the rectum (which was unusually difficult, from the spasm of the sphincter ani), and pressing upwards, the pain was very acute, and lasted some time after the finger was withdrawn. The prostate was slightly enlarged and very hot. From the effects of leeches to the perineum, a hip bath, ten grains of Dover's powder with two of calomel at bed time, and an oil draught the following morning, he became nearly well, and in three days was quite so.

In the next case we have retention of urine, in addition to the other symptoms.

Case II.—I went, with Mr. Moore of Anne-street, to see a young gentleman who had been taking a large quantity of cubebs in frequently repeated two-drachm doses for gonor-

rhœa. The discharge stopped, but he became affected with frequent desire to pass water; the efforts were very painful, and scarcely a drop came away. He suffered from pain in the perineum and in the anus, but the perineum was not tender. On passing the finger up the rectum I could feel the prostate enlarged, very hot, and very tender; the bladder was distended with urine. After the application of leeches to the perineum and the administration of tartar emetic had failed to relieve the retention of urine, I tried to introduce, first a silver, and then a gum-elastic catheter, number 10 size, but could not, on account of the resistance offered by the swelling of the parts near the neck of the bladder, and partly from strong spasm. I succeeded, however, with a small gum-elastic catheter, number 3, without the stilet, and drew off about a quart of water. The instrument required to be passed the next day, after which the symptoms subsided, and as they did so the gonorrhœal discharge returned freely. A step further, and suppuration would have taken place in the prostate gland, as occurred in the next cases.

Case III.—*Gonorrhœa; Retention of Urine; Abscess in the Prostate Gland.*

A young man, captain of a vessel, came to me, December 8, 1847, with one of the gentlemen in Messrs. Ward and Pring's establishment. He had gonorrhœa three weeks before, and three days ago, after having experienced some uneasiness in the perineum, he got retention of urine; he was then in Holyhead, and the water was drawn off by a surgeon there. He could not pass water after that, and came over in his vessel to Dublin, still labouring under retention, with the exception that, by great straining, a few drops came. There was also incontinence,—a little urine dropping constantly away from him, keeping his shirt quite wet. This proved that the muscular mechanism at the neck of the bladder had become deranged.

When I saw him there had been this sort of partial reten-

tion for two days, and the bladder could be felt enormously distended. I drew off three quarts of slightly turbid urine with a gum-elastic catheter without the stilet. There was a slight hitch as the instrument was passing over the neck of the bladder.

The next day, as he had passed scarcely any water in the mean time, I introduced the instrument again, and drew off about two quarts. Both on this and on the previous day he suffered the greatest pain after the withdrawal of the instrument, so that he nearly fainted, and was obliged to lie down for some time. Was this in consequence of the last drops of urine going over a raw and abraded surface in the affected portion of the urethra? The third day he told me he had passed a little water at night, but that in the morning he could not pass any, and in striving to do so some matter came from the urethra; and while sitting at stool a few minutes after, a large quantity of yellow matter, a tea-cupful at least, had come away from the urethra; that he felt relieved by this, but still could pass no water. The abscess had now certainly broken into the urethra. On the sixth day, some time after I had introduced the instrument, he again passed a good deal of matter,—about a wine-glassful at once, showing that the opening had not been sufficiently free to prevent a fresh accumulation.

On the seventh day I drew off a pint of rather turbid urine. Though he passed water with great difficulty, he was greatly improved in health. The last four times, I used a full-sized silver catheter, as I experienced some difficulty in passing the gum-elastic catheter without the stilet. There was a hard, cord-like feeling of the urethra in the perineum, as if the inflammation of the prostate and neck of the bladder extended some way along the urethra. The gonorrhœal discharge had ceased from the time of the retention. After this I saw no more of this young man, but heard from his friends that he got quite well.

In this case the finger, introduced with difficulty through

the anus, felt the prostate considerably enlarged, hot, and tender.

In the foregoing examples it will be observed, that the gonorrhœal discharge stopped as the inflammation of the prostate arose. From this fact, many authors, among the rest, Sir B. Brodie, have regarded it as a metastasis from the urethra to the prostate. I believe that the inflammation extends rather along the urethra to the prostate, and when this is inflamed it acts as a derivative to the irritation of the urethra, as inflammation of a neighbouring organ generally does on a similar principle. Inflammation of the testicle has the same effect on the gonorrhœal discharge.

Case IV.—*Prostatic Abscess from Gonorrhœa. Case reported by Dr. Frazer.*

Andrew Kelsh, aged 40, was admitted into the Richmond Hospital, February 19, 1846, under the care of Mr. Hamilton. He complained of great pain and difficulty in passing water, and had a pale yellow gonorrhœal discharge. A month ago he contracted the disease. About a week before admission, after sitting on the wet seat of a car during a journey of fourteen miles, he became affected with pain and a burning sensation in the glans penis, with inclination to pass water every half-hour. The stream gradually diminished in size until three days before admission, when he could only pass water in drops with great agony and smarting, and with burning pain in the hypogastrium and glans penis. He had constant desire to go to stool, but only from a feeling of uneasiness in the perineum, which caused him to change his position frequently. The discharge of a few drops of urine gave him ease for a few minutes, but the anxiety to pass it soon returned. The day before he entered hospital Mr. Hamilton passed a catheter, and drew off a pint of high-coloured muddy urine; and on admission the same quantity was taken away, with great relief to his sufferings.

February 20.—On examination by the rectum a large tu-

mour, formed by the enlarged prostate, was felt. The left lobe was most swollen and tender. This swelling of the prostate blocked up the rectum, and was hot and painful. There was strong spasm of the sphincter ani. He was directed to take a pill of five grains of calomel at night, and a draught of the infusion of roses and sulphate of magnesia in the morning. A warm bath was ordered at bed-time, and the urine was directed to be drawn off twice a day by the gum-elastic catheter.

21st. A silver catheter was used, and was found to pass with less difficulty. It caught against something while passing into the bladder, and on withdrawing it some dark grumous pus followed.

24th. Since last report the catheter has been introduced night and morning, and each time was followed by the discharge of pus. The prostate is diminished in size, the left lobe softer, and the discharge of pus (very different in appearance from the pale yellow gonorrhœal matter) is more abundant. In the evening, while at stool, he passed four ounces of urine: it was mixed with pus.

26th and 27th. The secretion of urine, which was diminished during the first violence of the attack, is becoming more plentiful: he passes it pretty well, but as he is unable to empty the bladder completely the catheter is still passed night and morning. The pus continues to flow, sometimes about a teaspoonful coming away at once. The catheter always gives the sensation of being caught about the prostate by a little hitch, as if by a membrane; though still painful, its introduction is much less so than it was. The prostate is much diminished in size. The sphincter ani still contracts with strong spasm around the finger.

March 2nd. Four or five ounces of water remain in the bladder, after he has made his utmost efforts to empty it perfectly. A little thick pus yet follows the urine.

9th. He improved rapidly after the last report. He can

now empty the bladder perfectly; the prostate is almost reduced to its natural size, and his only complaint is a little gonorrhœal discharge, for which he was ordered a copaiba mixture. He was dismissed this day.

The pus in the two preceding cases made its way out by an opening into the urethra: this is the most common way. In the following case it took a different route.

Case V.—*Gonorrhœa; Abscess of the Prostate Gland, making its way out in the Perineum.*

— Stivan, aged 20, a native of Bristol, a sailor, got gonorrhœa three months since; six weeks after, when it began to decline, he suffered from pain in the perineum, which became swollen near the anus. Both the swelling and pain continued to increase, and when admitted into the Richmond Hospital, January 5th, 1848, he seemed to be suffering dreadfully, and to be greatly depressed in mind and strength: he could scarcely stand upright, and could only sit leaning to one side. He had cough, quick pulse, and perspirations, and he had lost flesh so as to resemble a man in the advanced stage of phthisis, but careful examination discovered no physical signs of that disease. From a feeling that there was something in the rectum, he had been constantly taking purgative medicine. There was a large swelling, extending from the posterior part of the perineum backwards, rather to the right of the anus, and there was a cord-like ridgy feel for some distance along the urethra. The tumour was very tender and fluctuated, but the matter was evidently deep-seated, and there was no sign of pointing. I passed a straight bistoury deeply in, a little anterior and to the right of the anus, and a large quantity of yellow matter flowed out: the opening was a very free one. The next day he was wonderfully improved; pulse 80, and tongue clean; he had regained his spirits, and had no cough; the opening was contracted, and there was very little discharge.

January 11th. The fifth day after, the opening was nearly

closed. I passed my finger up the anus, and could feel, a little to the right of the mesial line, between the rectum and urethra, a hard ridge running up as far as the prostate, which felt very little more than its natural size.

14th. To go out; just well; the little sore of the opening to be dressed with simple dressing.

The occurrence of inflammation of the prostate in gonorrhœa, is evidenced by a train of symptoms referable to the position of the gland. Deep-seated pain at the lower part of the perineum, and about the anus, shooting forwards along the penis; frequent desire to pass water, with much straining, difficulty, and pain in the attempt; at length there is retention, the patient with great effort being able to pass only a few drops, while the bladder can be felt distended over the pubis. After the retention has existed some hours, incontinence of urine sometimes ensues, from the over-distended bladder, and the mechanism at its neck being impaired by the inflammation; this adds greatly to the patient's distress from his clothes being kept constantly wet and foul. At first there is generally no tenderness in the perineum (as there always is in inflammation of Cowper's glands), but if pressure is made with the point of the finger deep in, just before the anus, pain is complained of. Considerable spasm of the sphincter ani exists, so that much resistance is made to the introduction of the finger into the rectum; when it is accomplished, the prostate can be felt enlarged, hot, and very tender. There is one symptom mentioned by most authors which I have found to vary, viz., tenesmus, or a desire to pass something which was in the rectum. In some cases it has not been present at all; in others, the patient has been anxious for purgative medicine, from the conviction that there was a lodgment in the bowel. The amount of enlargement is also not uniform; in some cases, where the pain was excessive, the increase of size has not been proportional. In Kelsh's case the prostate was so much enlarged that the rectum was blocked up by it; suppuration had, however, taken place, and

the swelling was unequal, the left lobe being the largest. After matter has formed, the swollen prostate feels soft, and, after pressure for a short time, the point of the finger sinks a little into the tumour, as if there was some œdema; this I have noticed several times. At no time, either before or after suppuration, does the gland feel as hard as in the senile enlargement. The matter may be either in the substance of the prostate, a single large abscess, as in suppuration of one of the tonsils, and then it usually makes its way into the urethra, which I believe to be the best and safest exit, or the suppuration is in the loose areolar tissue about the prostate, and then the matter works its way out at the lower part of the perineum, near the anus, where the perineal fascia offers the least resistance. I have seen a case where the suppuration was diffused in this areolar tissue round the prostate, and which caused death. A number of small purulent depots have been found in the substance of the gland; it is a bad form of suppuration, and apt to degenerate into a very intractable chronic disease, chiefly distinguished by uneasiness at the neck of the bladder, and a distressing desire to pass water; partly from the inability of completely emptying the bladder. Some turbid urine, containing flakes of lymph and pus globules can be drawn off by the catheter after the patient has just urinated.

It might be feared, that when, as in the first case, the abscess opens into the urethra, the urine in passing along would enter the sac of the abscess, distend and burst it, and cause extravasation of urine, as sometimes happens in cases of stricture. We do not, however, find it to do so, the circumstances in fact not being parallel. In stricture, the opening of the abscess is into the dilated part of the urethra, behind the stricture; and the urine meeting with the obstruction, and getting through it more slowly than it comes from the bladder, distends this dilated part behind the stricture, and, rushing into the abscess, distends it too; and should the force of the bladder be very great, the walls of the abscess burst, and extravasation ensues. Whereas,

in inflamed prostate, the opening of the abscess is usually on the top or the fore-part of the swelling, particularly when made by the point of the catheter; the urine, therefore, passing through the obstructed part must flow so slowly that there is no danger of its forcibly entering the sac and rupturing it, and if any does enter, it will gradually flow out again with the matter.

For a long time after the acute symptoms have subsided, a degree of irritation will, in many cases, remain behind, a too great frequency, pain and scalding in making water, with an uneasy feel about the neck of the bladder and the rectum. A young medical man who had an attack of acute gonorrhœal prostatitis nearly two years before, consulted me for these symptoms; I found the gland still larger, hotter, and more tender than natural. In these cases a number of small shreds are observed in the urine.

During the first stage of acute inflammation of the prostate, the urine is rather scanty, high-coloured, and acid; in cases where the bladder cannot be completely emptied, the urine left behind, when drawn off, is usually, as might be expected, alkaline, rather turbid, and in the late stage, after suppuration, free pus is obvious to the naked eye, or the microscope detects numerous pus globules. In ordinary cases we do not see the ropy mucous deposit streaked with blood, so constantly found in inflammation of the bladder; a fact which, coupled with the complete or incomplete retention, and the diminished stream of urine in prostatitis, will serve to distinguish it from the former disease, with which the frequent and painful micturition would tend to confound it. The local examination with the finger in the rectum will aid in confirming the diagnosis. The freedom in passing water, previously to the attack, will distinguish it from stricture. The obstruction to the catheter also feels different from that of stricture. Boyer says that the instrument passes readily as far as the prostate, and then suddenly meets with an impediment: I have not found it so. In the very acute cases,

attended with retention of urine, the inflammation and swelling extend forwards along the urethra, and cause a gradual and rather soft obstruction to the passage of the catheter, long before it arrives at the prostate. Its entrance into the bladder is much facilitated by the finger in the rectum raising the point up, to mount over the enlarged prostate. A small-sized gum-elastic catheter, without the stilet, should be used; even this from the engorged state of the urethra, though passed gently, often causes smart bleeding. A moderate-sized silver catheter will, however, sometimes answer better. I have frequently felt a little hitch to the instrument as it entered the bladder, which might be from the point becoming entangled in the edge of the opening of the abscess, or that the enlargement of the prostate had raised a fold of the mucous membrane across the opening into the bladder, as we not unfrequently find in the diseased prostate of old men. When there is any difficulty in passing the catheter, where the retention requires its frequent introduction, where there are much straining, and pain, and frequency, and where a large portion of the water still remains behind after micturition, it is much better to leave the instrument in, even if only for a few hours; it allays the forcing and consequent irritation. In the following case it did much good.

Case VI.—*Inflammation of the Prostate Gland from Gonorrhœa; Retention of Urine.*

August 22, 1849. Patrick Arnold, æt. 32, a strong, healthy-looking man, and temperate, was admitted into the Richmond Hospital. Six or seven weeks since he contracted gonorrhœa, for which he has taken purges and a mixture apparently containing turpentine, and continued to do so up to the last week. The discharge had nearly ceased: only a clear drop in the morning. On Thursday last he had stoppage of water, not complete, as he could pass a little with frequent efforts. On Sunday there was complete retention, and the urine was drawn off with a gum-elastic catheter with the stilet in. On Monday it was

again drawn off, and on Tuesday by myself, with a silver catheter, No. 9, which went in easily. Between these operations he could pass a little water, having incessant calls to do so. The urine drawn off was very high-coloured, and not more than half a pint, the secretion evidently being scanty. The finger introduced by the rectum felt the prostate considerably enlarged, the size of an apple, smooth, hot, rather hard, and tender; the sphincter ani tight, and the rectum hot; but he is not sensible of a feeling of weight in the rectum, or any uneasiness there, or in the perineum. The tongue is furred, and the bowels are confined.

Twelve leeches were ordered to be applied to the perineum, and he was directed to take three grains of blue pill three times daily. I passed a No. 9 gum-elastic catheter with the stilet, and having drawn off the water, the instrument was left in. A little blood and thick grumous matter came from the urethra, as if a small abscess had been opened. The next day it was reported that the instrument had slipped out in the morning, but he says it has been of great use to him, as he has not now the same constant desire to pass water. The leeches by some mistake had not been applied. His bowels have been opened. The pills were ordered to be repeated, and he was directed to have a hip bath.

August 24th. The leeches were applied, and he has taken nine pills, but there is no soreness of mouth. He feels quite well; is able to pass water perfectly; and is free from more frequent calls than natural. But the prostate can still be felt considerably enlarged; softer, however, less tender, and diminished in size one-fourth. There has been no discharge, except a little thin and gleety matter. The next day he was dismissed cured.

Art. IX.—*An Essay on Puerperal Fever, with Suggestions for an Improved Method of Treatment.* By William Faussett, M. B., F. R. C. S. I., Medical Superintendent of Clontarf and Raheny Dispensary.

In most diseases of the epidemic class, the worst types of each species are wont to arise when individuals are congregated together. For this, as well as perhaps other reasons, puerperal fever usually presents itself in large hospitals under its most fatal and intractable phases. It might, therefore, seem unreasonable to expect that any line of practice, however successful it should prove in the detached or sporadic forms of this affection, would be attended with similar results under different and less favourable circumstances. The generally fatal tendency, however, of puerperal fever, is so well known to the profession, as to render apology unnecessary for offering any reasonable suggestions for an improved mode of treatment.

Assuming that the most marked recognised difference between the epidemic and sporadic forms of puerperal fever consists in the relative proportion of sthenic action developed in each, including of course corresponding states of the vascular and nervous systems; and that the sporadic disease in this point of view is associable with fevers of the inflammatory type and the more active forms of visceral congestion, while the epidemic resembles maladies of the asthenic or typhoid order; it follows, that, whatever amount of antiphlogistic treatment be deemed advisable in the one, a lesser amount ought to be required in the other; and that if it be possible successfully to treat the one without draining from the circulation any undue quantity of the vital fluid, it becomes in the highest degree feasible to apply the principles of such treatment to the other, or asthenic form of the disease.

The exact duration of an attack of puerperal fever cannot of course be accurately defined, it must be widely different under different circumstances; but if we may predicate in a

given case that, from the peculiar character of the symptoms, those destructive processes which most endanger the integrity of the organism, such as effusions of lymph and straw-coloured serum, with glueing together of the intestines, &c., are likely to set in early, our treatment should be such as to keep pace with the sometimes extraordinary rapidity of the disease: indeed it may be safely maintained, suitable regard being had to the patient's strength and other circumstances, that nearly all the resources of our art should be brought to bear on the case before an epoch arrives when recovery, by reason of organic change, is placed beyond the pale of hope: the truth of this position will, perhaps, in the main, be admitted by every practitioner. But is it practicable or possible, by any method of treatment, to arrest in its first stage the further progress of puerperal fever? The statistics of the disease sufficiently attest the mournful truth that, in a large majority of cases, no method of treatment hitherto adopted has proved adequate as a means to this end, for, though a fair and candid examination of the records which have been published, may lead us to admit that this object has occasionally been attained, as in some of the cases related by Campbell, Lee, and others, equal candour obliges us to observe, that the treatment leading to such results has signally failed in the hands of equally skilful and accomplished practitioners. We are driven therefore to the inevitable conclusion, that the discrepancies which have arisen in the experience of different physicians, must be owing to varieties in the disease itself, "there being," as Dr. Collins remarks, "great diversities of character in the disease in different situations, and even in the same situation at different periods."

The following imaginary illustration gives a fair view of the practice which has hitherto been, and still continues to be relied on in this very fatal disorder. A woman, about the second day after her confinement, is seized with a shivering fit, followed by fixed pain and tenderness over the uterine region, quick pulse, and other symptoms denoting the advent of puerperal fever.

There being a somewhat tympanitic state of abdomen, she is ordered the usual dose of turpentine and castor oil, together with the application of fomentations. In a few hours more it is found that the medicine has operated well, and that the stupes, which relieved the patient's sufferings, were kept diligently applied; but still the pain is excessive, the tenderness on pressure greater, and becoming more diffused, and the pulse quicker than before. She is now, perhaps, ordered to be bled to a certain number of ounces, or, if not considered a subject for general bleeding, she is freely leeched, and the leeching is followed by the continued application of stupes, or by immersing the patient in a warm bath; and at the same time mercury, most probably calomel, is prescribed in tolerably active doses, every third or fourth hour, either alone, or in combination with some other agent. The next morning it is reported that the leeches have bled well, that the bath or stupes have been resorted to, and that the calomel has been given at regular periods; still the patient is no better. Some two or three, or perhaps four dozen of leeches are now directed to be applied to the abdomen, hot fomentations to be diligently and constantly used, and the calomel to be continued in the same doses, but at shorter intervals. The patient is seen again at night, and again the following morning, and some modification of the same treatment is pursued(*a*). From certain changes in the character of the pulse, and the other symptoms, further leeching may be deemed inadmissible, and the calomel, having induced diarrhœa, is

(*a*) Dr. Collins, in his valuable reports of puerperal fever in the Dublin Lying-in Hospital, states that "in numerous instances ten, twelve, fourteen and sometimes sixteen dozen leeches," were applied in the course of a single case; "the warm bath being at the same time repeatedly used, with the almost constant application of stupes in the intervals;" and that calomel, which he frequently combined with ipecacuanha, was in some cases exhibited to the extent of "300, 400, and even 500 grains and upwards."—pp. 394–5. Dr. Collins, however, saw no advantage to accrue from administering calomel in scruple doses, which did not equally result from more moderate quantities repeated.

stopped, an opiate given, and mercurial inunction substituted. Such is, perhaps, a fair specimen of some of the more leading points of practice usually relied on in this formidable malady, there being of course certain deviations to meet the views of different practitioners, and to suit the circumstances of each particular case and the prevalent type of general disease. Now although in the strict sense of the word this is a rational practice, is to a certain extent justified by *post mortem* appearances, and in some varieties of the disease has proved most successful, it unfortunately happens that it too often falls short of attaining the desired end, death ensuing much more frequently than recovery.

In the hospital form of puerperal fever the cause of the great mortality must be in a great measure attributed to the congregating individuals together under circumstances which favour its development, perhaps by multiplying the subtle and mysterious agency which originally produces the disease. An interesting illustration of this remark occurred in two extensive dairy establishments in the neighbourhood of Dublin, some few years ago, when the distemper prevailed extensively amongst horned cattle. I was informed by the proprietor of one of these concerns, a gentleman of great observation, learning, and intelligence, that every newly calved cow was, as a matter of course, sure to be attacked by the malady, and generally in a more malignant and intractable form than the other cattle. One most remarkable instance he related to me of a cow which ate during the night her usual quantity of food, yielded in the morning her usual supply of milk, and, being soon after noticed to labour under disease, was dead in the evening, the autopsy exhibiting the same morbid appearances (viz., solidification of the lung, with effusions of lymph and serum into the pleural cavities) which were usually found in other instances, and to which I at the time took occasion to call the attention of the profession in a paper published in the Dublin Medical Press. By information derived from other sources, I had reason to know that cattle

kept at pasture in the fields usually lingered longer than those which were stalled in crowded sheds, although the ultimate issue in all was very much the same.

The fact of puerperal fever becoming greatly aggravated in its hospital forms, did not long escape the enlightened observation of the very able masters who, from time to time, have presided over the Rotunda Hospital; and the great improvements in ventilation, cleansing, scouring, and fumigating, which were introduced under their auspices, have, no doubt, effected more than medicine ever could to abate the ravages of this pestilence.

I will now detail briefly two cases of puerperal fever, of the sporadic form, which fell lately within the sphere of my own practice; first describing that which assumed apparently the milder character of the two, and which I happened to see almost at its very outset.

Mary Chambers, aged about 30, was confined of her first child on Wednesday, the 26th December, 1849. The day after her accouchement, being under no medical care, and rather badly attended to, she considered herself strong enough to sit up in bed, and even got out of bed and walked across the room; just at this time she experienced a chill, and on the same night was awakened out of sleep by pain in the lower part of the abdomen. The pain was at first only occasional, but towards morning became so severe that a messenger was despatched for me. A short time before my visit she was given a grain of the muriate of morphia, which was sent her from the dispensary, and this, together with a turpentine stupe, was said to have somewhat abated the pain. There existed, however, a considerable amount of tenderness over the uterine region, and at one particular spot on the right side this tenderness was so great that she could not endure even slight pressure; the tongue was coated with a drab-coloured fur; the face looked a little flushed; the pulse was only 86, but sharp. I ordered her two grains of calomel every half-hour, and a grain of muriate of morphia to be taken

with the first, and also with the fourth dose: but the medicine was not given with desirable punctuality. In the course of the day, however, ten doses of calomel, and two grains of muriate of morphia, not including the dose given before my visit, were exhibited. At 10 o'clock at night the medicine was, by neglect, discontinued; she passed, however, on the whole, a better night than the preceding, and suffered less from pain; and next morning the report was that she slept some; bowels twice freed; had slight perspiration; face looks pallid; tongue still furred; pulse a little more frequent, but less sharp than yesterday; and tenderness on pressure less over the right portion of the uterine region, but more extensively diffused through the abdomen than before, insomuch that pressing the hand near the umbilicus caused her to exclaim, that "the pain shot through her back." There was as yet no appearance of milk in the breasts. The lochia were diminished, but not altogether suspended. The strong tincture of iodine, freshly prepared, was now freely and copiously applied by means of a good sized brush, all over the uterine region, the whole surface between the umbilicus and pubis, and as far as the crests of the ilia, on either side, being thickly coated, so as to produce a dark brown colour, particularly at the part where tenderness was greatest. A few drops of croton oil were at the same time diligently rubbed over the upper portion of the abdomen, between the umbilicus and the ensiform cartilage, and two grains of calomel directed to be administered every half-hour; a grain of muriate of morphia to be given with the first, and also with the fourth dose.

Half-past 9 o'clock, P.M., has taken since morning twelve doses of calomel and two of muriate of morphia, and is now in a gentle perspiration. Tenderness on pressure greatly relieved; pain quite gone; the mouth is not affected by the calomel, but a strong mercurial fetor emanates from her person; the tongue, which was furred in the morning, looks now quite clean, and there is abundance of milk in the breasts since evening. She

states that the liniment, namely, the tincture of iodine, smarted her a good deal for about half an hour, but that ever since she has been free from pain. A slight eruption is apparent where the croton oil was rubbed in. The mercury was now discontinued.

30th. Bowels frequently acted on during the night, with griping, which disturbed her sleep; but there has been no return of pain in the uterine region. Slight tenderness on pressure, however, still continuing, the tincture of iodine was again freely applied, and five grains each of mercury with chalk and of Dover's powder, administered; and, in the event of further disturbance of the bowels, or griping, or want of sleep, a grain of muriate of morphia was directed to be taken at bed-time.

31st. Slept all night without the opiate; mouth affected with mercury; she is quite convalescent.

The second case, though in order of time the first, was not, like the preceding one, noted down at the instant; this is to be regretted, as it happened to be the more remarkable of the two. The details, however, having soon after been committed to paper, may, as far as they go, be strictly relied on. On Saturday, 6th October, I was sent for to visit Mrs. L., in her ninth confinement. All her previous labours, except the one immediately preceding, in which there was an arm presentation, had been natural, and of short duration. On the present occasion labour pains set in about 7 o'clock, P. M., and she was delivered of a full-grown child in about four hours, nothing remarkable having occurred throughout her labour, except that she suffered severely from cramps in the lower extremities. Prior to her confinement she had a troublesome cough, and, as this still continued, she took some cough mixture on Sunday, the day after; on Monday she complained of having suffered from after-pains, and, to relieve these, her bowels being free, an anodyne draught was directed at bed-time; early on Tuesday morning I was apprized that, notwithstanding the draught, she suffered all night from pains which yet continued. Apprehending still

nothing more than after pains, to which she told me she had always been subject, and being at the time particularly engaged, I prescribed three-quarters of a grain of muriate of morphia, to be repeated, if necessary, in the course of two hours. On my arrival, at 1 o'clock, P.M., I was at once struck with the altered appearance of my patient since the preceding day. The decubitus was prostrate, the face somewhat flushed, the countenance expressive of much despondency, which was the more remarkable, as she was naturally cheerful; skin intensely hot and parched; pulse about 130, and hard, and the tongue deeply coated with a reddish brown fur. She told me that she had been suffering dreadfully all night from severe unremitting pain over the womb; the tenderness on pressure in this region was most exquisite; she could not bear the slightest touch; coughing greatly increased her agony, and she could not venture to turn on her side. The uterine discharge had diminished greatly, but had not entirely disappeared; there was milk in the breasts; she had a shivering fit some time previously to the pain seizing her. I now became somewhat alarmed for my patient's safety, and inclined to reproach myself for not having abandoned other engagements to see her at an earlier hour. As she was rather a robust woman, my first impulse was to abstract blood from the arm. However, on due consideration, I resolved on a different course. I directed about eight grains of calomel to be taken at once, to be followed by an ounce of turpentine and a dose of compound powder of scammony, containing compound cinnamon powder; hot stupes to be applied to the abdomen, and in about an hour afterwards to commence taking two grains of calomel every quarter of an hour. This treatment, with an occasional half-grain dose of muriate of morphia, was persevered in, though most irregularly, and not without many lengthened interruptions, till next day. What the exact number of doses given of the calomel might have been I am unable to say, not having at the time made a record of them; the whole quantity of calomel administered, however, did not exceed half a drachm, and the quan-

tity of muriate of morphia, including the dose in the morning, was about three grains. In addition to these medicines, after the bowels had been freed, there were given, conjoined with the calomel, but at longer intervals, some five or six fractional doses *of tartarized antimony* (about the one-twelfth of a grain to the dose), together with a little nitre and as much compound cinnamon powder as caused it to rest easy on the stomach. These remedies, although irregularly administered,—four doses perhaps in rapid succession, then a cessation, then four doses more, and so on,—had, nevertheless, a remarkable effect upon the patient. Next day, by 11 o'clock, the fever had greatly subsided; the pulse had fallen to 90; the tongue was much less furred, and rather moist; the heat of skin moderated; abdominal tenderness greatly diminished, and the pain nearly gone. The mercury was now discontinued, but with an injunction to resume its use should the amendment not be permanent; and a dose of castor-oil was prescribed. The patient's convalescence was from this time uninterrupted, except that, the oil not having acted on the bowels, she felt in the evening of the same day great uneasiness, and sense of oppression at the præcordia; she was therefore directed to take a second dose of turpentine, which gave her speedy relief. Her mouth was affected with the mercury. In this case the first dose of calomel exhibited was designedly a large one, as from the advanced state of the symptoms it was considered desirable, if possible, to make, in the first instance, a distinct impression on the disease.

These two cases contrast strikingly with each other. The former was that of a primiparous female, in whom, contrary to what many might expect, the symptoms were by no means so acute as in the other; the suffering from pain, and tenderness on pressure, having, on the whole, been moderate, and the pulse, though sharp, having risen but little above the ordinary standard. She was, however, seen at a very early stage of the disease, and though it commenced stealthily, it was not, per-

haps, on that account the less dangerous. The subject of the latter case had become attacked in her ninth confinement, and in her the fever was of a sthenic character, the pulse ranging high, the skin being hot, and the suffering, even from the slightest pressure, almost intolerable.

It seems deserving of notice that in both cases a somewhat similar course, at least of internal medicines, modified to suit their circumstances respectively, should, within a very short time, have subdued all the more threatening and alarming symptoms, and have placed the patients in a great measure out of danger.

It is no less worthy of remark, that this desirable termination was attained without either bleeding or leeching, although the treatment was not carried out with that regularity and precision which would have been desirable, but which unfortunately cannot always be secured in dispensary practice. A question of greater interest arises from these cases, when considered together, than attaches to either of them separately; and that is, would the practice of exhibiting calomel in the same rapidly repeated doses be equally successful, not only in similar cases, but in those of another and somewhat intermediate order, in which, with a fever of low excitement, there existed the same amount of actual disease, but a much greater degree of nervous depression?

I trust it will not be supposed that it is the object of the present essay to deprecate either bleeding or leeching in the class of diseases under consideration. It is my firm conviction that both the one and the other have been, and are likely, in judicious hands, ever to remain invaluable auxiliaries in the treatment of puerperal fever. It should not, at the same time, be lost sight of, that the puerperal state, which may be considered the most helpless between childhood and old age, is essentially *one* of debility, and, as such, *not* favourable for great demands being made on the vital fluid. Bleeding from the arm, in order to exercise a salutary control over local congestion,

should be carried to the extent of making a distinct impression on the pulse, if not of inducing absolute syncope. The routine, and somewhat mechanical practice, therefore, of abstracting blood by the ounce or by the pint, is opposed to the first principles of a rational science; because the precise amount necessary to diminish vascular action in any given portion of the extreme capillary system, must, until ascertained by actual experiment, remain a matter of pure conjecture. If more is specified than the patient be afterwards found able to bear, the consequences will be injurious or dangerous; and if less, it most probably will not fulfil the indication. Laying down general rules, therefore, as to the amount of blood to be abstracted is in every way objectionable. When it becomes necessary to moderate the general momentum of the blood by venesection, or through the medium of the general circulation to act on local congestion, the rule undoubtedly should be to bleed to approaching syncope.

With respect to local bleeding, the application of leeches is open to the objection of doing, if not too little, perhaps too much; whilst the bathing, continued stuping, poulticing, and fomenting, must tend greatly to produce fatigue and exhaustion, as well as in some measure to interfere with the due and regular administration of remedies, which, in these specific forms of inflammation, are, perhaps, more distinctly curative in their effects. While, therefore, there is no denying to leeching an extreme value in relieving local congestion and local suffering, the questions still arise,—may it not in some cases be overdone? —may it not in others be wholly dispensed with? I can here very readily anticipate all that may be said about the prevailing type of disease, as the principle which should in this respect govern our practice. Modern science has not lost sight of this great truth, and certainly the predilections of the medical mind have not of late years been too strongly biassed in favour of blood-letting, for the tendency now is, perhaps, too much to the opposite extreme; but let the prevailing type of disease be

what it may, and the forms of active congestion presenting themselves under it influenced accordingly, the puerperal state is essentially one of debility, and therefore unfavourable for the employment of remedies likely to make violent impressions on the nervous system, or interfere too roughly with the vital functions. Besides which, it is not the amount of inflammation which most endangers the patient's life here, it is its peculiar and specific form; our remedies should, therefore, be chiefly directed to the character of the disease, rather than to the absolute amount of active congestion present, although the latter must be kept within control.

Whatever stress may be laid on *post mortem* appearances, as the unmistakable evidence of pre-existing inflammation, we should not forget that such appearances are sometimes found not merely in the robust, but in subjects the least likely to be affected by active hyperemia, who have been suffering the extremes of destitution and penury, and whose systems may have been reduced to the lowest verge of human existence by diarrhœa, or hemorrhage, or both. I find just such a case detailed by M'Clintock and Hardy, in their valuable work on Practical Midwifery; and such cases, no doubt, constitute the bulk of those in which the disease actually commences before labour sets in. These low forms of inflammation, which would resemble the decomposing of the blood and extravasation of its elements by a chemical, rather than by a vital process, were it not for the evidences of excitement in the vessels themselves, differ as much from idiopathic or traumatic peritonitis, as typhoid pneumonia differs from the more active forms of pulmonary congestion.

As it seldom falls within my own practice to meet with puerperal fever, I am anxious that the plan which has been faintly sketched in the two preceding cases,—viz., that of exhibiting exceedingly active remedies in small but rapidly repeated doses, at the shortest possible intervals,—should be presented to the consideration of those whose wider expe-

rience as obstetricians better entitles them to form an opinion of its suitableness in this formidable disease. I am desirous also that the external agents which were employed in one of the cases should receive a more extensive trial. The tincture of iodine, from the relief I have found it to afford in numerous painful affections, even when connected with deep-seated congestion, I should judge as likely to prove a valuable remedy in the early stages of puerperal peritonitis. It is free from the objection which with good reason is urged against the premature use of blisters, as, so far from increasing, it greatly tends to control and subdue existing irritation. It cannot, therefore, be applied too early in the disease, while the peritonitic affection is yet localized; and it should for this purpose be laid on with the greatest freedom, till the whole or the greater part of the abdominal surface below the umbilicus becomes of a dark brown colour, especially such parts as are most sensitive to pressure. The relief which the patient, Chambers, experienced from this application, was very striking, and I only regretted not having given it a trial in the other female, whose case, however, had occurred previously. Fomenting the abdomen for a quarter of an hour before the iodine is applied will probably tend, by softening and relaxing the skin, to secure a more speedy and certain effect.

Although this remedy has been extensively used in some chronic pulmonary affections, particularly phthisis, I am not aware of its having been previously recommended in the early stages of puerperal or indeed of any other form of peritonitis; yet of its utility as an auxiliary to, and in a great many cases a substitute for leeching, when boldly and judiciously used, and repeated according to circumstances, I am inclined to form very sanguine expectations. Then, with respect to croton oil, this being an agent which for several years past I have employed with the greatest advantage for pustulating the surface of the body in a great variety of congestive diseases, it occurred to me to make trial of its efficacy as a derivative in the

case already described, but at a point somewhat remote from the centre of diseased action. Croton oil, although one of the readiest and most valuable counter-irritants we possess, is certainly open to strong objections, from the accidents occasionally attendant on its use. Not the least annoying of these arises from its well-known tendency to pustulate beyond the limits of the surface to which its application is confined, and for this reason it would be highly imprudent in the case of a puerperal female, as it is indeed hazardous in any case, to employ this active agent in the vicinity of the groins or pudenda, as troublesome excoriations or even sloughing might chance to result. Its application, however, to the central and upper portions of the abdomen, I hold to be of considerable value in both preventing and arresting almost every form of abdominal congestion. I may mention that in dysentery, where, however, other measures were employed, I considered it in several cases mainly instrumental in checking the disease.

Next, with respect to internal treatment. Too much time ought not to be lost in exhibiting purgatives, for although the colon in advanced pregnancy is apt to become loaded with feculent matter,—an incident which may co-operate with other causes in disposing to peritonitis,—it seldom happens that the bowels are not properly and sufficiently evacuated at or about the period of delivery; at least, no case ever comes under my observation where some form of purgative, generally castor oil, is not, as a matter of course, and even sometimes unnecessarily, administered. There can, therefore, be no very essential reason for commencing the treatment of puerperal fever by a purgative. Where tympanitis exists, as it may, independently of any lodgment or remora, turpentine is capable of relieving it, whether it purges or not, for this valuable remedy will often have such an effect even when applied externally. The leading treatment should, therefore, be commenced without a moment's delay, for if, within a certain period, the disease can be arrested, the patient is safe; but let it progress to any great extent beyond this

period, and she may be irrecoverably lost. The distinguishing feature of this treatment, I apprehend, should be the administering small doses of active medicines in very rapid succession, the great and paramount consideration being to seize the disorder at its first advent, and, if possible, prevent its further progress. But, it will be asked, what is the advantage gained by exhibiting medicines in small doses, which will not equally accrue from giving the aggregate of such quantities in á single dose?

The massive structure of the rock, which for ages may have braved the fury of the surf, crumbles beneath the insignificant but importunate dropping of the small constant stream. Nature may be persuaded when she will not be coerced; and physical agents, brought to bear on the disordered functions of our bodies by a succession of gentle reiterated impressions, will often produce specific changes with greater certainty of effect than when made to act with rudeness and force. The effect of the sudden application of cold on an inflamed surface will generally be that of a stimulus; but if, instead of abruptly dashing a quantity of cold water on such a surface, the same amount be suffered to trickle gradually upon it, drop by drop, the effect will be to lower vascular excitement, and lessen irritation. Now, something like this may be occasionally noticed in the internal administration of active medicines; for when exhibited in small quantities made to keep pace with the course of disease, we may sometimes effect in a given time changes which the aggregate of such quantities, administered at once, could not accomplish. A grain of tartar-emetic exhibited under circumstances of general fever, may excite vomiting in the patient; but after the emetic effects have ceased, it is possible the pulse shall be found as quick, and the skin as hot as before. Let the same amount be given in ten or twelve doses, so as to keep within the bounds of absolute emesis, administering the dose every hour, or half-hour, as the case may be, the effect will be to lower the pulse, and moderate fever in

a surprising manner. This is true with respect to mercury also; there are cases in which calomel may be given in large doses with most beneficial results, but puerperal fever, I apprehend, is not one of these:—on the contrary, moderate yet decisive doses, administered in quick and rapid succession, seem better suited to the asthenic, but subtle and insidious swiftness of this dangerous disease. A case like that of Mrs. L. will occasionally, however, occur, where, from the advanced stage of the symptoms, it may be desirable to commence with a rather more than average dose, in order to make, if possible, a corresponding impression in the first instance. Calomel given by the scruple, or in smaller doses, until so much as "an ounce and upwards"(*a*) was administered, has frequently failed to lead to successful results, even when salivation, as sometimes happened, could be effected. Now, although this is a disheartening truth, we should, nevertheless, derive encouragement from the fact that the cases must be rare indeed which end fatally where salivation could be produced in the early stages of the disease, or where the more prominent and urgent symptoms had been subdued by mercury, or in fact by any means. If, therefore, it be admitted as true that when mercury can be administered in the early stages of puerperal fever so as to affect the system, a favourable issue may be expected, who will be disposed to dispute that it is to this our utmost efforts should tend? But is there a probability of our being able to give mercury so as to accomplish this object when we have so often failed in our attempts by every method hitherto adopted? I have no hesitation in stating that our best hope of bringing mercury to bear successfully on the early stages of puerperal fever (and I speak from its effects on analogous states of the system), is by administering calomel in moderate, but decisive, and rapidly repeated doses, combined, when the fever is in excess, with an antimonial,—either James' powder, or else fractional quantities

(*a*) See Collins' Reports, *loc. cit.*

of tartar emetic,—and under almost all circumstances, with a sufficient quantity of opium to prevent a purgative action on the bowels.

With respect to administering an antimonial in even fractional doses, such as one-twelfth of a grain of tartar emetic, it may seem liable to the objection of the stomach being often already in an irritable state; and when this is so to any extent, it should, no doubt, interdict the use of any such agent: but this objection may sometimes be found more apparent than real, simply because the irritability of the stomach in such a case is not contingent on a cause inherent in the organ itself, but depends on a sympathetic or reflex action of its nerves. The same objection has been made to exhibiting tartar emetic in bronchitic affections where the stomach inclines to turn with each recurring paroxysm of cough; but I have frequently found, and perhaps the superiority of a rational over a mere empirical practice cannot be more beautifully illustrated than by this fact, that tartar emetic in such a case, if given at first with some little caution, and suitably combined, will relieve the cough, and, by relieving the cough, exercise the anomalous action of tranquillizing the stomach.

Under any circumstances, however, it is only at the commencement of puerperal fever, and in the more sthenic forms of the disease, that antimony is indicated; and from the amount of vital exhaustion it sometimes produces, it is a remedy, the effects of which require to be closely watched.

I may here mention, that had the patient, Mrs. L., laboured under vomiting and a sick stomach, it is probable that, in place of exhibiting antimony, bleeding to syncope, followed by a full dose of opium, would have been the practice best adapted to prepare the system for the exhibition of calomel. The tendency of antimony to relieve internal congestion by equalizing the circulation, and determining the force of its currents to the capillary vessels on the surface of the body, renders it, when suitably combined, and exhibited, with caution, very often a

valuable substitute for blood-letting in a great variety of congestive diseases, abdominal as well as cerebral and thoracic.

With respect to opium, I believe the best plan is to exhibit a full dose at once, and subsequently repeat it in more moderate quantities, so as to keep within the bounds of narcotism, but at the same time obtain its full sedative effects on the system. For this purpose I am convinced that one of the best, if not the very best preparation, is the muriate of morphia. Besides relieving pain, keeping the bowels in a quiescent state, and tranquillizing nervous excitement, thus directing, as it were, the more specific actions, both of the antimonial and the mercurial on the system at large, opium is well known to exercise a peculiar and somewhat specific effect in preventing, if not controlling abdominal inflammation.

The action which opium directs upon the whole capillary system, as is evidenced by its tendency to produce diaphoresis, and by the remarkable congestions which in cases of poisoning by it are found in the brain and lungs, must tend, when not contra-indicated by the state of these viscera, to create a diversion highly favourable for the relief of abdominal congestion. If the momentum of the blood, however, be greatly above par, the force of its currents should be moderated by venesection, before the exhibition of opium.

That this decisive and rapid mode of exhibiting medicines is that which the exigencies of puerperal fever most frequently require, may be deduced from the fact, that in the epidemic form of the disease, as stated by M'Clintock and Hardy, and other authors, the "inflammation spreads with such fatal rapidity that a very few hours are sufficient for it to pervade the entire extent of the peritoneum."

There are few diseases then, cholera, perhaps, excepted, in which the recovery of the patient so necessarily hinges on the treatment adopted in the first stage. If this be prompt and energetic, and keep pace with the great rapidity of the disorder,

without drawing too much on the vital energies of the patient, we may hope for much better results than when the same or a much greater amount of treatment, so to speak, becomes diffused over a longer period. We know that remedies which act energetically in one stage of a malady, may prove worse than useless in another. Blisters applied too early in inflammatory diseases will often increase and aggravate the inflammation. Mercury given too late in disorders, where it might have been at first beneficial, will run down the patient's strength, and prevent all hope of recovery. In puerperal fever mercury is confessedly a valuable remedy; but once extensive effusions take place into the peritoneum, who can then boast of its efficacy? The first element of success, therefore, in conducting a case of puerperal fever to a favourable termination, consists in measuring our treatment by the probable length of time during which treatment of any kind shall be available; in other words, adapting our measures to the course and progress of the first stages of the disease.

Professor Law, to whom the science of medicine is much indebted for many accurate and judicious observations, published in the fourteenth volume of the first series of this Journal, a paper of great interest, showing "the very small quantity of mercury required to affect the system when exhibited in minute doses at short intervals." The method adopted by Dr. Law is deserving of the highest consideration; it was that of exhibiting one-twelfth of a grain of calomel every hour; and he states that he found "salivation in some cases produced by twenty-four pills, or two grains of calomel," and that "seldom were forty-eight pills, or four grains, required to produce this effect." Dr. Law adverts, however, to "the pertinacity" with which "puerperal peritonitis and cholera resist the operation of mercury," &c.

Dr. Ayre of Hull, whose views on the subject of exhibiting calomel in cholera have, of late, been put so prominently for-

ward, recommends two grains of calomel every ten minutes, as the proper cure for the stage of collapse, to the exclusion of almost every collateral agency.

It will be seen that the method of exhibiting mercury in puerperal fever, put forward for the first time(*a*) in the present essay, differs from the practice both of Ayre and Law; from the latter, by the employment of much larger, though (as compared with the practice of others) small, doses, and at much shorter intervals; and from the former, by the remedy being rather excluded from the periods corresponding with the collapsed stage of cholera, and limited, as much as possible, to the earlier stages of puerperal fever; while most powerful collateral agencies,—venesection and antimonials, in suitable cases, and opium in almost every case, &c.,—are advocated, with the view of favouring the operation of mercury on the system.

Having been led to advert to the subject of cholera, I may mention, that in the course of the last summer, and part of autumn, it came within my province to meet with a large number of cholera cases in the dispensary district of which I have the medical charge; and, though foreign to my present purpose to allude to any observations I may have made on the nature and treatment of this formidable malady, I may, perhaps, hazard the remark, that if there be one disease more than another in which the well-known axiom of "*obsta principiis*" applies with peculiar force, I suppose, by common consent, that disease will be allowed to be cholera. Now *that* which is true of

(*a*) If injustice has been done to any previous writer by the above remark, I am not aware of it. In the article "Puerperal Fever," in Copland's Dictionary of Practical Medicine, to which my attention has been called since the above was written, I find no allusion to any views similar to those which it is the object of this essay to develop; and Dr. Copland's observations, besides being the most recent, are, perhaps, amongst the ablest and most rational that have hitherto appeared on the subject. In some varieties, particularly the more malignant forms of the disease, he recommends camphor as well as opium, and seems to have much reliance on the use of turpentine in the synochoid or intermediate forms.

cholera I believe to be also true of puerperal fever, with this difference as regards the latter, that the attack generally extends over a longer period, and that, the patient being already under observation, the disorder is more likely to command attention in its first stage.

Further, an analogy which, to a certain extent, exists between these two diseases, would encourage the hope, that if any thing like fixed principles could happily be once agreed upon to determine our treatment of the one, they might possibly issue in the enlightenment of our views in conducting that of the other. Puerperal fever and Asiatic cholera are so essentially unlike in origin, in symptoms, and general pathology, that it appears at first sight fanciful to imagine even a remote resemblance between them; but conceding that their obvious and specific differences are such as to forbid their being classed together in the same category, the following considerations, common to both, are, perhaps, not unworthy of attention. 1st, Both diseases are abdominal; at least the virulence of the "*materies morbi*" seems to be concentrated in the abdomen; serous effusions with lymph taking place into the peritoneum in the one instance; watery discharges from the whole course of the intestinal tract occurring in the other. 2nd, In both diseases there is great vital prostration, yet depletory measures are said to have been tried in both with advantage and success. 3rd, There is in both diseases a fearful tendency to a fatal result within a short period, while, in the more advanced stages of each, all human interference becomes too often nugatory and vain. Lastly, Some of the medicines much relied on in the one disease, have strong claims on our confidence in the other.

It might be possible to trace other analogies between these two fatal disorders; the foregoing seem, however, not wholly undeserving of notice.

To return to the subject of administering mercury in small and rapidly repeated doses; it seems not improbable that a truth of great practical value, and of very extensive application in

connexion with this practice, may hereafter become more fully developed, viz., that *those acute diseases which, by reason of their violence and celerity, most tend to bring organic structures into sudden and imminent danger, may be best treated—sanguineous depletion apart—by small doses of active medicines exhibited in the most conveniently rapid succession :* laryngitis, tracheitis, pericarditis, &c., will be at once suggested as suitable for such practice.

I may here mention, that very lately in a case of injury of the head, where suppurative arachnitis appeared imminent, as well as in other affections, I have tried with advantage and success this peculiar mode of administering medicines; and from some observations I have made on mercury thus exhibited, I am disposed to think that within the narrow limits of the time during which it might be deemed expedient or safe to persist in its use, salivation is *not* a result to be immediately anticipated; on the contrary, that the subjugation of the disease may be often expected *before* salivation; and that in this point of view it is more likely to become an object with us to prevent, than to induce so disagreeable a consequence.

It will be inferred from all that has been now stated, that the first termination of inflammation or resolution, is the object which our treatment should aim at in such a disease as puerperal peritonitis. It will be seen that the measures chiefly relied on for this purpose are not in the general run of cases,—bleeding, leeching, purging, stuping, bathing, and poulticing,—although such means may be often required, and some of them be found useful. It is not the administration of mercury in very large, nor even in moderate doses, the aggregate of which should form an excessive quantity, but in doses of one or two grains every quarter or half hour, so long as may be deemed expedient during the primary stages of the disease, and on the principle that thirty grains in thirty, or in fifteen doses, exhibited during the first few hours of the attack, will, *cæteris paribus*, act

with infinitely greater power than eight(*a*) times the same quantity given during a period extending over eight times the supposed number of hours. It will be observed that antimonials in fractional doses, guarded by an aromatic and an opiate from irritating either stomach or bowels, and exhibited *under observation*, are much relied on for lowering the pulse and equalizing the circulation; and that opium, while exercising its anodyne and sedative effects, is looked to for securing, and, at the same time, qualifying the action of the other medicines; and, lastly, that certain external agents possessing the immense advantage which blisters do not possess, that of being applicable to the first stages of the disease, are put forward as in the highest degree likely to exercise a salutary control over its further progress.

This essay has extended to a far greater length than was at first intended, which must be ascribed to an apprehension of mistake arising respecting the views put forward on a subject of such vast importance.

Amongst the many eventful scenes to which our profession introduces us, few, perhaps, partake of more painful and exciting interest than those which occasionally attend the course of puerperal fever; for sad, indeed, must be the revulsion of feeling, when, after having witnessed the wondrous process by which a fellow-being becomes ushered into life, we are destined to see the strong ties of nature severed, the mother scarcely permitted to look on the fruit of her womb, but, as the blossom has become evolved, the fair plant itself perishes; while, in the righteous Providence of a great First Cause, we see the helpless creature of so many throes and pangs bereft of the source of its sustenance and protection, to be cast on the cold sympathies of an hireling, or left to the chance pity of a selfish or unheeding world. As considerations, therefore, of the highest

(*a*) 520 grains, or more than seventeen times this quantity, have been given in the course of a single case. See Collins' Midwifery, *loc. cit.*

social and moral import combine to enlist the first feelings of humanity in behalf of woman in her state of greatest weakness, at a period when her life is doubly precious, because doubly interwoven with the best interests of society, it would be proportionably unbecoming, as well as ignorant, to insist on the applicability of the forementioned course of treatment to *all* the varieties of puerperal fever. Medical practice must vary with the ever-changing phases of disease, and nothing could be more empirical than to maintain the universality of any rule of practice. A general principle, however, has been contended for, viz., that puerperal fever, to be treated successfully, must be treated promptly in its first stages; and that when mercury is deemed advisable for this purpose, in other words, not contra-indicated by idiosyncrasy or other inherent or adventitious cause, that its exhibition in the manner now prescribed will be found generally commensurate with the peculiar exigencies of this too often fatal disorder.

Art. X.—*Clinical Observations on the Treatment of Urethral Hemorrhage, and of Irreducible Epiplocele.* By James S. Hughes, M. D., F. R. C. S. I., Surgeon to Jervis-street Hospital.

As I conceive it to be the duty of every hospital surgeon to record cases of interest which may occur in his wards from time to time, the following are now published, with their treatment, and the observations which they suggested at the bed-side, trusting that they may be considered capable of affording practical instruction.

URETHRAL HEMORRHAGE.

There is, perhaps, no form of hemorrhage, which, when profuse, causes more alarm to the patient, or proves more troublesome to the surgeon, than that arising from the urethra, especially if it resist the ordinary modes of treatment; and as

great difficulty is at times experienced in arresting the bleeding, when it springs from a part of the urethra beyond the influence of pressure, we cannot be too well prepared to meet such cases by prompt and effectual treatment.

The causes of hemorrhage from the urethra are very numerous; amongst the most frequent, however, may be mentioned those arising from the acute stage of gonorrhœa, rupture of the urethra from falls on the perineum, and the improper use of instruments. When the hemorrhage does not arise from any distinct accidental cause, it may be difficult to find out from whence it proceeds; but experience tells us that, under these circumstances it is occasionally the consequence of malignant disease of either the kidney or bladder.

Of all the sources of obstinate bleeding from the urethra, the most fruitful, perhaps, is that caused by the rough handling of the catheter, either by the patient himself or by an inexperienced practitioner, in cases of diseased prostate gland; examples of which most surgeons have met with, and which, unfortunately, often tend to shorten life. But the most alarming form of urethral hemorrhage I ever saw, occurred lately in the person of a man who presented himself at Jervis-street Hospital, caused by the giving way of some vessels in the urethra during the venereal orgasm. As it is a rare and complicated case, I shall give it in detail:

—— Mullens, æt. 35, a very delicate-looking man, a hatter by trade, presented himself at the Dispensary of the Hospital on May 8th, 1849. The patient was perfectly anemic in appearance, being quite blanched in the face; his pulse was rapid and feeble, and the extremities were cold. He stated that at four o'clock on that morning, immediately after sexual intercourse, he felt the lower part of his night-dress quite wet, and that on inspection he observed a stream of florid blood flowing from the urethra. He left his bed, and, having dressed himself, attempted to stop the bleeding with cloths wrung out of cold water, but without effect, the blood continuing to pour out until his arrival

at the Hospital at nine o'clock, A. M. On examination, I found his shirt and several folds of rags saturated with blood; I then removed some clots of blood from the penis, when a stream of florid blood poured out from the orifice of the urethra. The frænum exhibited no appearance of injury, and there was nothing external to account for the hemorrhage; there was neither fulness nor pain on pressure along the penis, or in the perineum; and the patient had passed water three or four times since the accident.

On questioning him he stated that he had been married for the last eight years, but that previously to his marriage he had suffered several times from gonorrhœa, and that he had been labouring under a frequency of calls, and difficulty in expelling his urine, for about ten years, for which he had not consulted any surgeon.

A middle-sized catheter was now passed four inches and a half into the urethra, where it met with an obstruction; a smaller-sized gum-elastic catheter was then, with some difficulty, passed through a long cartilaginous stricture, a distance of about seven inches, when it was suddenly arrested in its course. Other instruments were then cautiously tried, and as they apparently took the direction of a breach in the canal, as the patient had passed water several times since the accident, and as there was no evidence of extravasation, it was not deemed advisable by Dr. Power (my colleague on duty) or myself to have recourse to violence in attempting to introduce an instrument into the bladder. A full-sized catheter was then passed down to the obstruction, the patient was put to bed, and proper pressure was applied to both the perineum and penis; but although the pressure was assiduously kept up for a considerable time, the bleeding evidently continued, flowing backwards into the bladder, the patient having frequent and urgent calls to make water, which contained much blood and some coagula. Experience having taught me the value of gallic acid as a styptic in affections

of the urinary organs(*a*), I ordered it in the following form: Gallic acid, eighteen grains, and extract of gentian, eight grains; to be divided into six pills, one to be taken every second hour.

Before the patient had taken more than two doses of the gallic acid, the hemorrhage had completely ceased, at which time the presence of the acid in the urine was detected by the addition of the tincture of the muriate of iron. The patient left the hospital of his own accord on the second day, there being no return of the bleeding; and he promised to return in a few days in order to have an instrument passed.

Laceration of the urethra, followed by profuse hemorrhage, as a result of the venereal orgasm is a very rare occurrence, there being few cases of the kind on record, but, although rare, it may lead to very serious results, as we learn from the following case, related by South, in his edition of Chelius' Surgery(*b*).

"I may here mention, that I once saw a case under my colleague, Mr. M'Murdo's, care, in which there was enormous extravasation of blood from the bursting of some vessels in the penis during the act of coition, and the result of which was, that the penis especially, and the perineum, were greatly distended, and he was unable to pass his urine without extreme pain, in consequence of which a catheter was introduced. In the course of two or three days extravasation of urine ensued, and the bladder was punctured through the rectum. Considerable sloughing, not only in the perineum, but also up into the groins, took place, into which incisions were made as needed, and he ultimately, though slowly, recovered."

With regard to the application of pressure to the perineum in cases of hemorrhage from the urethra, there does not now exist in the minds of surgeons that prejudice against it, which

(*a*) In the third volume of the New Series of this Journal I have published a case illustrating its effects in hæmaturia from injury.

(*b*) Vol. i. p. 157.

Sir Everard Home and others improperly entertained on the subject. Sir Everard Home's objection to it was, that, although it arrested the flow of blood externally, it directed it backwards into the bladder, thereby converting, as he said, a case of simple bleeding into one of danger, by the filling up of the bladder with coagulated blood, and probably inducing retention of urine. No doubt the filling up of the bladder with coagulated blood in these cases is a most unpleasant complication; and numerous cases of urethral hemorrhage have been published by Guthrie, Brodie, and others, in which pressure on the perineum, whilst it arrested the bleeding from the orifice of the urethra, appeared to have directed it backwards into the bladder, yet the filling up of which viscus, although attended with much annoyance to both patient and medical attendant, was not, *in itself*, productive of serious consequences. The proper mode of treatment to be adopted in cases of profuse hemorrhage, when it proceeds from the urethra *anterior* to the triangular ligament, is obviously that by pressure; and if the rules laid down so clearly by the best authorities on the subject, especially those by Mr. Guthrie, be strictly followed, the bleeding point will be soon arrived at, and hemorrhage, either anteriorly, or backwards into the bladder, will be, in most cases, completely arrested. But, on the other hand, in cases of profuse hemorrhage springing from the membranous or prostatic portions of the urethra, *posterior* to the triangular ligament, where pressure can exert but little, if any, beneficial influence, the surgeon should, I think, rely chiefly on the immediate exhibition of gallic acid internally. In it he may place the greatest confidence, its rapid and powerfully styptic action on the urinary organs rendering it peculiarly suitable to such cases. Its timely administration will, in all probability, prevent the distention of the bladder with blood, the necessity for having recourse to instruments for the purpose of withdrawing the contents of the bladder, and the subsequent injection of that viscus with tepid water, with the intention of breaking up

the coagula; which operations must, in all cases, tend more or less to induce a recurrence of the hemorrhage by the additional infliction of mechanical violence or irritation thereby. The gallic acid may be administered, in these cases, in doses of from three to ten grains, but my experience has led me to prefer giving it in three-grain doses every second hour, to giving it in maximum doses at longer periods. The stomach will, in some cases, reject the large doses, when frequently repeated, whereas I have never known it to disagree in three or four grain doses repeated at short intervals, by which means its influence on the urinary organs is steadily maintained. The acid may be ordered either in the form of pill, or suspended in water by means of mucilage.

IRREDUCIBLE EPIPLOCELE.

The following case is an example of irreducible femoral epiplocele, of long standing, which was successfully treated by pressure, confinement to the recumbent position, and the application of iodine.

William Leak, aged 65, a shoemaker by trade, was admitted into Jervis-street Hospital, on the evening of September 25th, 1849, labouring under obstinate constipation, accompanied by vomiting, and pain in the lower part of the abdomen, which was full and tympanitic. The pulse was quick and feeble, and the countenance pale and dejected. The bowels had not been moved for four days. On examination, Mr. Fitzgibbon, the resident pupil, detected a femoral hernia of considerable size, on the left side; it was hard and tense, and somewhat irregular on its surface. After the employment of the taxis for some time, he succeeded in returning part of the hernial tumour into the abdomen, which went up with a loud noise; but a considerable portion of the tumour was left unreduced, having resisted every effort to return it. However, immediately after the partial reduction, the patient experienced considerable relief from his symptoms, his bowels having been twice naturally evacuated, and the vomiting having ceased.

When visiting the wards on the following morning, I found that the patient had passed an easy night, during which he had six copious evacuations. On examining the left groin, the protruded part felt very hard, and was somewhat painful on pressure, especially at its outer margin, which was elastic to the feel, and regular on its surface, whilst the inner portion of the tumour was somewhat irregular, and yielded to the touch a doughy inelastic sensation, such as is afforded by the omentum. There was no distinct impulse communicated to the mass by coughing; the base of the tumour had turned up on Poupart's ligament, to which it was closely approximated.

On minutely examining the hernia, it was manifest that it sprung from the femoral ring; for its neck, which was hard and fixed, could, by flexing and rotating the thigh inwards, be traced escaping from the abdomen; and the man being of a very spare habit, the crescentic margin of the fascia lata could be distinctly felt. External to the hernia were found the cicatrix of an old bubo, and two or three enlarged glands. The case being evidently one of entero-epiplocele, immediate recourse was had to the taxis, by which we were enabled to reduce the external and smaller portion of the tumour, which evidently consisted of intestine, and went up with a slight noise. This portion had been reduced after his admission, but had made a fresh descent before our morning visit, probably whilst the patient was at the night-chair. All our efforts to return the inner and larger portion of the hernia failed; this, from its peculiar feel, irregular surface, and freedom from impulse, obviously consisted of omentum.

The history that the patient gave of the rupture was unsatisfactory; all he could tell us was, that for years he had noticed "a large kernel in his groin," which occasionally pained him, and that he was very liable to attacks of colic, his bowels often being constipated for days.

Feeling that, as long as the patient suffered from this irreducible epiplocele, it would be impossible to succeed in per-

manently keeping up the gut, and that the application of an ordinary truss might, under the circumstances, do him more harm than good, I determined to try the effects of equable compression to the tumour, together with confinement to the recumbent position; and, to carry out this intention, I ordered a truss from Mr. Thompson of Henry-street, which was furnished with a hollow conical pad, of such dimensions as to receive the protruded omentum, and so arranged as to exercise constant equable pressure on the part. This instrument was applied, and the patient was confined to bed in the recumbent position, with his hips elevated; the tumour at the same time was freely painted over each day or every second day, with the strong alcoholic solution of iodine, and hydriodate of potash, and traction of the part was daily employed for the purpose of breaking up adhesions, if possible, and gradually bringing down the hernia from Poupart's ligament. The patient was subjected to this combined treatment for upwards of three weeks, at the expiration of which period I was enabled to return the protruded omentum completely; and, having adjusted a well-formed femoral truss, with a good convex pad over the femoral ring, neither gut nor omentum have since descended.

The proposal of treating a patient with a hernia, apparently irreducible, by confinement to the recumbent position, is as old as, if not older than, Fabricius Hildanus, who gives an account of a man who was radically cured of a rupture of twenty years' standing, by *six* months' confinement to bed, and low diet. Arnaud used abstraction of blood, with low diet and the recumbent position, with the same intention, and successfully. And Mr. Pott states his opinion that many ruptures which were put down as irreducible would have been found capable of reduction had a more judicious and patient method of treatment been adopted; and when this condition is suspected, the treatment should consist of absolute rest in the supine posture for a considerable length of time, great abstinence, and the use of evacuants, so as to lessen the size of the parts in the hernial sac, and render

them capable of passing back again into the abdomen. Some of the older surgeons placed great confidence in the exhibition of the water of caustic potash in cases of hypertrophied epiplocele, being under the impression that it dissolved the adipose tissue so often deposited in old omental herniæ. Sir Astley Cooper has reduced cases of large scrotal hernia, which were supposed to be irreducible, by the application of ice, the good effects of which he imputed to the contraction of the scrotum thus caused by intense cold, keeping up a strong and permanent compression on the tumour; and lastly, Mr. Lawrence deserves much credit for calling the attention of the profession to the advantages of the recumbent position and pressure in the treatment of herniæ supposed to be irreducible.

To practical surgeons the treatment of irreducible herniæ must be at all times one of the greatest interest, for as long as a portion of intestine or omentum remains unreduced, so long must the medical attendant feel an anxiety about his patient; and should the case be one of entero-epiplocele, his anxiety is not altogether relieved by his succeeding in returning the intestine, and leaving a portion of omentum unreduced. For, although an omental hernia, when irreducible, is seldom, when considered abstractedly, attended with bad symptoms, yet it at all times tends to favour the descent of a knuckle of intestine; and further, there is a remote possibility of the protruded omentum itself becoming the subject of inflammatory action, being exposed to all the consequences of external injury and violence.

The following question here suggests itself: are there any cases of irreducible hernia in which an attempt at reduction on the part of the surgeon would be injudicious? There are undoubtedly cases of large herniæ of long standing, in which the protruded parts have attained so great a size, and in which the abdominal parietes have become so adapted to the decrease of their contents, that the reduction of the hernial tumour would be followed by all the symptoms and dangerous consequences

of the introduction of a foreign body into the abdominal cavity. Thus I lately saw a patient with a monstrous congenital hernia, which held such a volume of intestines, that even a partial reduction of the protruded parts was immediately followed by the most distressing symptoms: therefore in each individual case the surgeon must exercise his own judgment.

In Leake's case I made use of the strong spirituous solution of iodine and hydriodate of potash as an application to the tumour, with the intention of stimulating the absorbents to reduce the hypertrophied condition of the omentum, and thereby lessening the bulk of the protruded mass; while, by interposing soft leather between the integuments and hollowed truss, the stimulating effects of the iodine did not prevent the necessary pressure from being upheld. In cases where a powerful stimulation of the absorbents is required, the alcoholic solution of iodine and hydriodate of potash is to be preferred to any other preparation of iodine. I use it in its strongest form, viz., two scruples of iodine, and one drachm of hydriodate of potash, to the ounce of spirits of wine.

I regard this case as an encouraging one; for, although unpromising in the beginning of the treatment, both from its history and symptoms, yet the plan adopted, viz., confinement to the recumbent position, properly applied pressure, and the local use of iodine, was attended with perfect success; and it is an important fact, that his being kept in bed for upwards of three weeks, did not, at his time of life, act injuriously on his constitution.

That many cases of hernia have become irreducible from firm adhesion and increased bulk, every practical surgeon must admit; but I am strongly inclined to agree with Mr. Pott, that many have been put down as irreducible, which would have been found capable of reduction had a more judicious method of treatment been adopted.

Art. XI.—*On the Motions and Sounds of Aneurism, the Mechanism of their Production, and their Diagnostic Value.* By Robert D. Lyons, M.B.T.C.D., L.R.C.S.I., Ex-Clinical Assistant to the Meath Hospital.

Notwithstanding the attention which has been hitherto bestowed on the study of the pathology and diagnosis of aneurism, as it affects both the primary arterial trunk and its subdivisions, much yet remains to be done before the investigation of this important disease can be considered in any way complete; for, undoubtedly, great obscurity still invests many interesting questions connected with its relations to other lesions, its position with regard to the "law of morbid association," and its discrimination from the other forms of disease which in common with it possess the character of presenting tumour.

The general question of the diagnosis of aneurism from cancerous and other forms of disease capable of being confounded with it, has received considerable elucidation from the labours of practical observers; and many rational principles have been established, of the highest moment in aiding us to ascertain the precise nature of tumours in the course of the great vessels. But no little confusion and uncertainty still exist as to the precise method or order to be followed in studying or recording the several symptoms presented in particular cases, while one important class of phenomena has, with few exceptions, been very negligently investigated, and their import misinterpreted, at the same time that untenable theories have been advanced to explain their causation.

Omitting in the present inquiry the consideration of those signs which tumours possess in common with several affections of the cavities in which they may exist, such as palpitation, dyspnœa, cough, hemoptysis, &c., I shall proceed to study those which more immediately belong to the science of auscultation.

Considered in the most general point of view, the phenomena observable in aneurismal or other tumours would seem to be readily divisible into two great classes, viz.:

1st, *Extrinsic*, or those which result from the relation of the tumour to surrounding parts; and

2nd, *Intrinsic*, or those originating within the tumour, and developed by its own proper actions.

Each of these classes presents at once several subdivisions; and we shall see that in their combinations and modifications are to be found the elements of all scientific diagnosis of the disease; and it remains yet to be shown, whether, in the absence of all the phenomena of the second great class, or those which I have denominated *intrinsic*, as may occur in formations within the cranium, it is at all possible to arrive at positive and just conclusions.

The modifications of the particular phenomena presented by tumours are much influenced by the site occupied by them, and deserve to be investigated in a special manner, according as they are situated in the three cavities of the head, the thorax, and the abdomen, or in the neck and the extremities; and we shall find that the number of diagnostic elements to be looked for in any particular case bears a very constant relation to the situation in which the disease is developed. Thus we know that in the thorax the phenomena reach their maximum of complication, that the abdomen presents us with the next greatest number and variety, and then the neck and extremities, where the fewest are to be sought for; while in the cavity of the cranium it is quite possible that the *intrinsic* may be altogether absent. With regard, however, to tumours within the cranium, developing, as they often do, phenomena connected with abnormal manifestations of nervous energy, it appears to me preferable to study them by a separate method of investigation.

Intra-thoracic tumours, as well as those which occupy the cavity of the abdomen, present us with a phenomenon not avail-

able for purposes of diagnosis in those which occupy the course of the great vessels in the head, neck, or extremities, and dependent on the presence of air in these cavities. Hence in the general expression of the diagnostic elements to be considered in aneurismal or other tumours, we find that the *extrinsic* phenomena are capable of being divided into two sub-classes.

1st. Those resulting from eccentric(*a*) pressure.

2nd. Those from interference with sonoriety.

The phenomena of the first subdivision, or those resulting from eccentric pressure, are deserving of the very highest consideration, especially in the study of tumours occupying the cavities of the thorax and abdomen; and they may be regarded, perhaps, as those which are calculated to give the very earliest indications of deeply seated disease, though it does not appear that their combination in any possible way, or even their association in a marked manner with the second class, or with the phenomena from interference with sonoriety, can ever be expected to do more than announce the existence of tumour generally. Some assistance, it is true, may be derived from considerations connected with the doctrine of probabilities, as based on statistical observations; for by far the greater number of intra-thoracic tumours on record are undoubtedly aneurismal(*b*). But for the

(*a*) This very appropriate term was first applied by Dr. Stokes.

(*b*) The value of this method of approximating to a diagnosis from statistical considerations and the doctrine of probabilities, is usually very much over-estimated. For, although the frequency of occurrence of any one particular lesion may be infinitely greater than that of any other special lesion, yet comparing the occurrence of the first lesion with those of *all* the lesions which are capable of simulating it, the probabilities of diagnosis must be estimated from the ratio which the frequency of the occurrence of the first bears to the *sum* of all the other lesions, and not from its relation to the frequency of occurrence of one other special lesion. Thus it is usual to compare the number of cases of aneurism with the number of cases of cancer, instead of comparing it with the *sum* of the number of cases of cancer, of enlarged glands, of hydro-pericardium, of dilatation of the pulmonary artery, &c., taken together. Hence the little value of such general *a priori* conclusions.

establishment of a direct and positive diagnosis we must closely investigate the intrinsic phenomena presented in any particular case, from which, as we shall see, the most important conclusions may be drawn. And to the study of these, especially as developed in aneurismal tumours of the great cavities and of the extremities, I propose to devote the principal portion of this essay.

The motor and auscultatory phenomena presented by aneurism of the aorta, or of its subdivisions, are subject to endless variations of character and intensity, and much confusion exists generally as to the exact import and value of any or all of them; so much so, indeed, that the observations of Dr. Stokes on this point are almost as applicable to the generality of auscultators in the present day as when first written.

"There is," says this author, "a great deal of misconception abroad with respect to the occurrence of *bruit de soufflet*, or other murmurs, as a sign of aneurisms; the truth is, that these phenomena are frequently altogether absent, and we are in great want of facts to explain their absence or presence in particular cases. I have observed their absence in aneurisms of all parts of the aorta"(*a*).

Notwithstanding the variety and modifications of the *intrinsic* phenomena of aneurisms, we find that they are all readily reducible to two sub-classes.

1st. Those which depend on the motor properties of the tumour.

2nd. Those which are developed by its auscultatory principles(*b*).

It will be found that in studying the phenomena in this order they are very much simplified, and we shall consider them successively in relation to tumours of the thorax, of the abdomen, and lastly of the neck and extremities.

(*a*) Dublin Journal of Medical Science, First Series, vol. v. p. 417.

(*b*) The observations in this paper have reference solely to tumours on the line of the great vessels.

The motor phenomena constituting the impulses of aneurisms, are in many instances appreciable by two of our senses, sight and touch, and from these alone many important conclusions can be drawn, which are of great value in discriminating between tumours communicating with the larger vessels and those which are only in contact with them. In by far the greater number of cases of thoracic aneurism hitherto recorded, the shock conveyed to the hand placed over the tumour has been distinctly double, while in aneurisms of the abdominal aorta and those of the extremities, a single impulse only has been observed. This constitutes a most important difference, the explanation of which will require a close investigation of the physical laws which regulate the circulation. Though the double impulse is not of necessity always to be looked for in thoracic aneurisms, its presence is sufficiently constant to warrant us in stating generally, that this variety is characterized by a double impulse. The acoustic phenomena observable in aneurisms consist of sounds presenting all varieties of intensity, and exemplifying all the modifications which have been hitherto observed in connexion with the circulation. The sounds of thoracic aneurisms, like the impulse, have, in the vast majority of cases, been double; while, with a few exceptions, those observed in the abdominal aorta or its branches, and in the arteries of the extremities, have been single.

The following cases have been selected as illustrative of the positions here maintained, and are detailed briefly, and with especial reference to the question of the impulses and sounds.

Case I.—John Casey, aged 51, a rectifying distiller, was admitted into the Meath Hospital on the 6th of November, 1847. He stated that he had indulged a good deal in the use of ardent spirits, but had generally enjoyed pretty good health; about April of this year he began to suffer from pain in the left side and back of the head, extending down the neck, through the

shoulder and scapula, and thence into the arm; he had occasional and severe attacks of palpitation of the heart, particularly at night, and became unable to repose on the right side; he shortly after began to be sensible of a pulsation within the thorax. Having got a severe wetting in August all his symptoms became much aggravated, and within three days he experienced some difficulty in swallowing, and a partial loss of voice, while the dyspnœa and sense of oppression about the chest, from which he had previously suffered, became much increased.

On admission he presented a rather pale countenance, not indicative of much suffering, his principal complaints being of the pain in the left side of his head and shoulders; his voice was rather remarkable, higher in pitch than natural, and husky; the pulse of the left wrist could be felt with very great difficulty; and, as was discovered long subsequently during a very careful examination made by Dr. Stokes, the left carotid was completely obliterated; some doubt as to the cause of this obliteration existed in consequence of a cicatrix lying over the course of the vessel, but which he said was due to an opening made by himself several years before, to give exit to a small quantity of matter.

The respiratory murmur was generally feeble, while percussion gave a dull sound over a surface about four inches square, occupying the superior third of the sternum and the cartilages of the first three ribs of the left side, which part was considerably more convex than the rest of the chest. A visible throbbing movement in this situation at once arrested attention; there was also a distinct pulsation above the right clavicle. On applying the hand to the front of the sternum, a distinctly double diastolic impulse was felt, giving a very considerable shock; this surface was rather tender, and continued pressure on it caused extreme faintness, pain, and general perspiration. On applying the stethoscope, a double sound, accompanied by a gentle souffle was heard; the first sound was dull and pro-

longed, the second shorter and more abrupt. The heart's action was normal, and was ascertained to precede that of the tumour by a short interval.

The patient was under observation on several occasions at intervals of two or three months. He appeared to receive considerable benefit from the treatment adopted, which consisted of moderately generous diet, with a small allowance of wine or porter, and occasional leeching of the tumour.

The Case Report for the 11th of May, 1848, contains the following observations made by Dr. Stokes, during a clinical visit:

"The action of the heart was normal, no second impulse was found to exist, both sounds natural; there was much difference in the phenomena of the aneurism in the upright and in the recumbent positions: in both the double sound and double impulse were perceptible, but they are, particularly the latter, much stronger and more evident in the upright position; the second sound was louder in the aneurism than in the heart; the souffle had at this time disappeared."

After being under observation at different periods for more than two years, this patient, who was rather of a roving disposition, was finally lost sight of.

The next case presents some additional features, and is an example of aneurism leading to a fatal result, without rupture of the sac at any time.

Case II.—Robert Owenson, aged 50, became a patient in the Meath Hospital, under the care of Dr. Lees, during the summer of 1848. He had been in the army from early life, but, though exposed to much hardship, he had never received any bodily injury. He had been a member of the regimental band, and had played the serpent and trombone. His health had always been excellent until within the last twelve months, when he had suffered from a severe attack of bronchitis, accompanied by swelling of the legs and abdomen, which continued about a month, and finally disappeared. Shortly after a tumour of

inconsiderable size presented to the right of the sternum, corresponding to the cartilages of the third and fourth ribs; it was accompanied by some pain in the chest, and dyspnœa, but no dysphagia. In July, 1848, he was attacked with difficulty of breathing and dysphagia, while the tone of his voice became much altered, and he experienced great difficulty in maintaining a conversation. He also suffered from pain in the left side of the head and shoulders. About this time a second tumour presented to the left side of the sternum, opposite the first, unaccompanied by pain, but pulsatory. The epigastric veins became swollen from their origin as high as the sternum. From this period all the phenomena increased in intensity, the dysphagia and dyspnœa causing him great distress, sleepless nights, &c. He became unable to use solid food, and even liquids were swallowed with great difficulty. He suffered for a short period from slight pain in the spine, but was never subject to the constant or violent boring pain so often attendant on aneurism.

On admission he presented a very peculiar expression of countenance, indicative of much suffering. The face was full and congested, though not at all œdematous. He was almost constantly obliged to maintain the sitting posture while in bed. The intonation of his voice was very remarkable, and there was considerable stridor from below. The voice was that of one speaking with difficulty, and as if the words were formed altogether during inspiration. The hands were of a dark congested colour, and, as well as the feet, considerably below the natural standard of heat. The neck had assumed the peculiar "tippet-like" form, and the hollows behind the clavicle were converted into prominent convexities.

No inequality of pulse was observed, and the chest was universally resonant, except where the tumour presented. There was likewise no inequality of respiration. A well-marked prominence occupied the middle third of the sternum and cartilages of the second and third ribs on both sides. This tumour was not uniform, being somewhat less prominent in the centre

than at either side, and was of a dark brown appearance, covered with small veins; the front of the chest generally was œdematous.

From the time of his admission into hospital, his principal sufferings were caused by recurring attacks of aggravated dyspnœa, during which his respiration was extremely laborious, the stridor becoming more intense, the face congested and livid, and the eyes starting forward. He was often obliged to pass whole nights in the sitting posture, and towards the close of life the fits of dyspnœa became more frequent, attacking him during the day as well as the night.

The radial pulse was not affected on either side; the respiratory sounds, though feeble, were uniform; and the chest was universally resonant, except over the tumour. The hand, placed over the aneurism, felt a distinct, heaving, diastolic throb, not synchronous with the heart; and two sounds were detected by the stethoscope(*a*).

In this case death took place without rupture of the sac or hemorrhage of any kind, apparently from a protracted and aggravated attack of dyspnœa.

On *post mortem* examination a very large false aneurism, globular in figure, and about four inches in diameter, was found springing from that part of the ascending portion of the arch where it joins the transverse. It had contracted most intimate adhesions to the sternum, which was in part eroded; the trachea was compressed, the line of its direction being a little altered, so as to be convex towards the right side, but its caliber was not very much diminished. The sac was almost completely filled with concentric laminæ of fibrine, and communicated with the cavity of the aorta by a free opening about an inch and a half in diameter. The edge of this opening

(*a*) In the absence of accurate notes of the phenomena of sound and motion in this case, I cannot venture to speak with confidence of their characters; but the impression remaining on my mind is, that the impulse was double, and that the sounds were not of the nature of *bruit de soufflet*.

presented an irregular line, but its surface was smooth. The aorta below this point, down to the semilunar valves, appeared quite healthy. The valves themselves were perfectly transparent, free from deposit, and quite competent to perform their office. It is to be regretted that the condition of the recurrent and other nerves in the vicinity of the tumour was not carefully examined. The paroxysms of dyspnœa were extremely frequent and distressing for a short period before death, and in the absence of hemorrhage, or other lesion, the fatal result appears to have been caused by a prolongation of one of these fits beyond a certain point: it being well known that the suspension of respiration for a brief period is incompatible with the continuance of life. Should a similar case occur again, might the question of tracheotomy be entertained? It is manifestly the surgeon's duty to prolong existence under any circumstances, though, with an aneurism, in the condition of that under consideration, the patient's chances of living are at a minimum.

The next case is also an example of thoracic aneurism with double sound and impulse.

Case III.—Samuel Wilson, aged 35, a butcher, was examined by me, for the first time, on the 6th October, 1849. He is a low, stout man, with florid complexion. He first began to suffer from aching pain in the chest about six months previously; this gradually increased in intensity, extended through the head, shoulders, and arms, and, with a little dysphagia, has been his only cause of complaint. On proceeding to examine the radial pulses, it was found that a large cicatrix, from a burn, occupied the anterior surface of the left carpus and inferior part of the fore-arm, so that the radial artery was obliterated in this situation. The respiratory sounds were equal on both sides, and there was an absence of stridor. The heart's impulse and sounds were perfectly normal. A flat and not very prominent tumour occupied the middle of the sternum, the surface of which presented some venous discoloration. It

was observed to pulsate visibly, and on applying the hand two impulses were felt, the second being very feeble. The stethoscope detected two sounds, neither of which was accompanied by murmur; they were both of rather a dull character.

March 18th, 1850. I have had an opportunity of examining this case to-day after a very considerable interval of time. His general health has much improved, and his sufferings from pain are much less than formerly, though he has continued without intermission at a most laborious occupation, that of journeyman butcher, and has lived very freely. The tumour is somewhat less prominent, and the signs less marked than when he was under observation before. The dysphagia has completely disappeared, and he is very seldom troubled with any dyspnœa, passing most tranquil nights.

The right radial pulse is full, strong, and beats visibly, though there is very little visible action of the vessels of the neck. The respiratory sounds are uniform, the heart's action is normal, and two distinct centres of pulsation can be observed in the thorax. The hand, placed over the upper third of the sternum, receives a distinct diastolic throb of considerable force, which forms the first impulse, and is readily perceptible; but, with very careful and patient examination, a second, shorter and feebler, can be detected. Two sounds, dull in tone, but strong, are heard by the stethoscope, their point of greatest intensity being the left half of the superior third of the sternum.

The patient was now placed in the recumbent posture, the head on a level with the trunk, and the motions and sounds carefully examined; *they were both fully as well developed in this position as in the upright, and both continued double.*

These cases present a combination of phenomena, which, in the main, agree with the results arrived at by other observers. Of the extrinsic signs, the first subdivision, or those developed by eccentric pressure, have not been manifested in a very marked manner; while, from the second, we have had

unmistakeable evidence of interference with sonoriety, and of the existence of tumour. The cases recorded by Stokes, Greene, Bellingham, and others, fully establish that in the majority of instances intra-thoracic aneurisms have been accompanied by double sound and double impulse; while, on the other hand, with a very few exceptions, those of the abdominal aorta and its branches have presented single impulse and single sound. The following cases illustrate remarkably some of the principal signs and symptoms attendant on aneurisms of the abdominal cavity.

Case IV.—J. Branagan, aged 30, by trade a baker, was admitted into the Meath Hospital, under the care of Dr. Lees, August 5th, 1848. He was a man of spare habit, generally temperate, and of healthy constitution; for nine months previously to admission he had been subject to constant grinding pain in the back, extending into either hip, and around the margin of the false ribs on the left side to the left hypochondrium; he had also suffered for some time from dysphagia, referred to a point opposite the lower end of the sternum, and from uneasy sensations in the stomach, particularly after meals, but never attended with vomiting; the bowels were generally constipated; and he had been for some time sensible of a pulsation in the epigastric and left hypochondriac regions. For a week before admission he had uneasy sensations in the left side of his chest, scarcely amounting to pain, but accompanied by some dyspnœa.

On percussion the left side of the chest posteriorly, from the scapula downwards, was found quite dull, with absence of respiratory murmur; in the opposite lung the vesicular murmur was rather loud; the heart's action was very rapid but normal.

A visible pulsation in the epigastric and left hypochondriac regions at once arrested attention. A tumour of considerable size could be felt in this situation, which gave to the hand placed over it a distinct single diastolic pulsation of great

power; and a loud single *bruit de rape* was audible by the stethoscope, while he was in the recumbent position. On making him stand up the murmur became inaudible, and the pulsation was much diminished in force.

He continued in this position until the morning of the 8th of August, when he was suddenly attacked with syncope; as soon as a little reaction took place, he presented all the appearance of a person dying from hemorrhage, the countenance blanched, and the surface cold and perspiring. The left side of the chest had become universally dull on percussion, as well in front as behind; and I ventured to offer an opinion that rupture of the aneurismal sac had taken place, and that he was dying from hemorrhage into the pleural cavity. He survived only a few hours.

On opening the thorax the left lung was found compressed to a very small size, the cavity of the pleura being occupied by a vast quantity of blood, which had completely separated into serum and crassamentum; the convex surface of the left half of the diaphragm presented two perforations, one situated close to the spine, recent, patulous, half an inch in diameter, the other more anterior, apparently of older date, and blocked up by a coagulum. An aneurism, about the size of a small orange, was found in the abdominal aorta, under the crura of the diaphragm, which were much expanded over it. This tumour occupied the twelfth dorsal and first lumbar vertebræ, which were much eroded. The aneurismal sac appeared, at no remote period, to have become diffused into a limited space around the vertebræ, on their front and sides, forming a circumscribed false aneurism external to the original sac, and communicating with the apertures in the diaphragm.

In this case it would appear, then, that there were at least three periods at which hemorrhage from the sac had taken place: first, when, the sac having given way, blood became effused on the front of the vertebræ, and was circumscribed by the crura of the diaphragm. Secondly, when, about a week previously to

admission, he began to suffer from pain in the chest; at this period we may conclude that the diaphragm had given way for the first time, by the more anterior of the two openings above described, effusion of blood having then taken place into the cavity of the pleura, causing the dulness posteriorly from the scapula downwards, which was noticed on his admission; in this instance a coagulum appears to have formed in the opening, and the loss of blood was thus checked. And thirdly, when the diaphragm had again given way by the second and most posterior orifice, and death had resulted from the copious hemorrhage into the same side of the thorax, causing, as was noticed, universal dulness. In this case the impulse and sound of the tumour were observed with great care, and no doubt could be entertained that they were each single; they also underwent remarkable modification in the upright position, a fact first pointed out, I believe, by Dr. Corrigan. The next case presented many features of similarity.

Case V.—L. Purcell, a groom, was admitted into the Meath Hospital, under the care of Dr. Stokes, during the summer of 1848. He suffered from pain in the back, but it was not so severe, or of the same grinding character, as in Branagan; it also extended round to the hypochondrium. He complained of uneasiness after meals, but had no vomiting: the bowels were generally constipated. The tumour occupied the epigastrium and left hypochondrium, presented a single strong diastolic impulse, and a single *bruit*, which was rather harsh. The hydrostatic test was tried in this case also, and with the same result, namely, diminution of the force of the tumour and disappearance of the *bruit*. He could not be induced to stay in hospital, and, having resumed his occupation, died very suddenly. No *post mortem* examination could be obtained.

Dr. Neligan has kindly furnished me with notes of the observations which he had made on this case in December, 1847, when Purcell was for some time a patient in Jervis-street Hospital, from which it appears that the commencement of his

symptoms dated at least eighteen months previously, when he first began to suffer from pain in the back and hip; but until about three weeks before his admission into Jervis-street Hospital he had never become sensible of pulsation in the epigastrium. With regard to the phenomena of motion and sound, I am very happy to have my own observations confirmed by those of Drs. Stokes, Lees, and Neligan, as I find that M. Gendrin, the distinguished physician of La Pitie, has expressed a most decided opinion as to the nature of these phenomena in aneurism of the abdominal vessels. In the Revue Médicale, for December, 1844, he observes:

"Les battements anomaux des anéurysmes profonds qu' on percoit à la main sur les parois des cavités splanchniques sont doubles;" and again:

"Ce second bruit de choc ne manque jamais dans les anéurysmes des grosses artères, il est même joint à une impulsion évidente, il est peu prononcé dans les anéurysmes des artères moyennes, il est nul dans ceux des vaisseaux du troisième ordre."

These statements are quite at variance with the facts noted by the majority of observers in Ireland; it is true that in rare instances a second sound has been heard in abdominal aneurisms, but I know of no recorded case in the Irish or English periodicals in which a double impulse attended the abdominal form of the disease. My own experience of the disease, as it presents itself in the cavity of the abdomen, is limited to the two cases above recorded; and though they would hardly warrant a general conclusion as to the precise nature of the *intrinsic* phenomena attendant on this form in the majority of recorded cases of abdominal aneurism, a single diastolic impulse, and a single sound, presenting, however, in different cases, every variety of character and intensity have been observed(*a*). Some undoubted exceptions to this general rule

(*a*) These statements are amply corroborated by reference to the works of Hope, Copland, Crisp, and others.

have occurred. Dr. Stokes informs me that, in at least two cases, he has observed a double sound accompanying this variety of aneurism; and in his work on Aconite, Dr. A. Fleming details the particulars of a case in which double sound and single pulsation were manifested. I transcribe his account of this observation, as it appears to have been made with great accuracy and attention.

"J. W., æt. 40, was admitted into the Royal Infirmary, Edinburgh, under Dr. Paterson, July 5th, 1843, with an aneurismal swelling (of two years standing) of the abdominal aorta, situated immediately below and to the left of the xiphoid cartilage. It pulsates strongly, and a purring, tremulous sensation is communicated to the hand; two murmurs are heard, the first, which is the louder of the two, corresponding to the dilatation of the sac; the second, to its subsidence. Posteriorly, on the left of the spine, a pulsating swelling is observed, and two sounds are audible, corresponding to the pulsations of the heart. The first of these is accompanied by a slight *bruit.* When lying in bed he feels the tumour in the back pulsating with great force. He suffered from constant and severe lancinating pains in the left side of the abdomen, and extending downwards to the left groin, and around the hip-joint; heart pulsates strongly; sounds normal; pulse 84, full and firm." The tincture of aconite was administered for upwards of a month, and with great relief to the neuralgic pains.

"The force of the pulsations in the tumour was at the same time remarkably diminished; the abnormal murmurs acquired a soft, blowing character, and the second of them was frequently entirely absent. The patient could not feel the pulsation in the back, and the *bruit,* which accompanied the first sound in that situation, was, for the most part, inaudible. Death ensued on the 18th of August, from rupture of the sac, and escape of blood into the sub-peritoneal cellular tissue"(*a*).

(*a*) An Inquiry into the Physiological and Medicinal Properties of the

Of the cases of aneurism of the branches of the abdominal aorta on record, the only one that I am acquainted with, in which a close stethoscopic investigation of the motions and sounds was made, is that laid before the Pathological Society by Dr. O'Ferrall, at the meeting of March 16, 1850. The case was one of aneurism of the superior mesenteric artery, presenting a manifest moveable tumour, with single diastolic impulse, purring tremor, and a single *bruit*. The *frémissement* appeared to reside as well in the tumour itself as in a small vessel which crossed it, and which was detected during life. The aortic and mitral orifices were both diseased in this instance. By the kindness of Dr. O'Ferrall I have been favoured with an examination of the recent parts. The aneurism was about the size of a small egg, and contained coagula; and à small vessel ran in front of it.

I have long and anxiously sought for an example of aneurism of the vessels of the neck, for the purpose of instituting a careful and minute investigation of their motor and auscultatory phenomena, which in most of the cases on record have been examined in a very cursory and unsatisfactory manner, though I cannot but think that they are deserving of the very highest consideration, as upon them alone must our diagnosis be founded; and, indeed, with the examples of error in diagnosis, and consequently in practice, which have occurred with some of the most distinguished surgeons, in reference to tumours on the line of the vessels in the neck and extremities, no details can be considered too minute in the examination of the motions and sounds presented in particular cases. Hitherto I have been unsuccessful in my search for cases of tumours in the course of the carotid or subclavian artery. By the kindness of Mr. S. G. Wilmot, Surgeon to Steevens' Hospital, I am enabled to make a few observations on a diseased condition of the femoral artery.

Aconitum Napellus, by Alexander Fleming, M. D. London, 1845. The author is now Professor of Materia Medica in the Queen's College, Cork.

Case VI.—John Dunne, aged 26, was admitted into Steevens' Hospital on the 2nd March, 1850, under the care of Mr. Wilmot.

About seven years since, during an instinctive effort to grasp a falling knife between his thighs, the femoral artery was opened in the middle third of the left thigh, which accident was followed by considerable hemorrhage, and after a few days by the formation of a pulsating tumour.

The artery was tied in Scarpa's space shortly afterwards by the late Mr. Wilmot, without, however, much effect on the tumour, which soon regained its former size; but as the patient experienced no suffering whatever, he was indifferent about it, and continued up to the present time without medical aid.

March 4th. I examined the case on this day, in company with Messrs. Wilmot and Fleming. There was an oval flattened tumour in the middle third of the left thigh, apparently crossed on its inner aspect by the sartorius muscle, and presenting about its centre the cicatrix of the original wound. It was quite free from pain, and he at no time suffered inconvenience from it. To the hand a powerful single diastolic impulse was communicated, accompanied by a remarkably intense *frémissement*, which, though present when the limb was laid flat on the bed, or when supported by the hand, yet disappeared when the adductor muscles were thrown forcibly into action. The impulse was distinctly single, and was unaffected by elevating the foot so as to allow the column of blood below the sac to be under the influence of gravity. On applying the stethoscope, a most intensely loud sound was heard, which, on careful auscultation, appeared capable of being analysed, and separated into two, one of which was perfectly continuous, uniformly of a humming character, the other synchronous with the arterial beat, and of a loud whirring character. The combination of these two formed a most remarkable sound, which could not be more aptly compared to anything than to the noise of a winnowing machine. It was apparently unaffected by the absence

or presence of the *frémissement*, and was audible when the ear was several inches distant from the end of the stethoscope. The popliteal artery beat fully as strong on this side as on the opposite, and there was an absence of venous discoloration or œdema. The pulsation and sounds were arrested by firm pressure over the femoral artery under Poupart's ligament.

Many general considerations make it highly probable that in this case a communication exists between the vein and artery, and the stethoscopic signs give corroboration to this view. Under no circumstances have I witnessed an example of continuous murmur in an artery, or in any of the ordinary forms of aneurism(*a*). I am therefore disposed to consider it as produced in the vein, while the shorter and rythmic sound is developed in the artery. This, therefore, cannot be taken as an example of external aneurism accompanied by two sounds, which, though possible, I think must be a very rare occurrence, requiring special conditions for its production; I have not myself detected the double sound in aneurism of the lower extremity, but Mr. Wilmot informs me that in a case of popliteal aneurism, some years since under the care of Mr. Cusack, in Steevens' Hospital, and of which he took accurate notes, a double sound was observed in the sac. The morbid specimen which is preserved in the hospital museum is an example of true aneurism or dilatation of all the coats. The tumour is about the size of a small apple, communicates with the artery by a rounded free aperture, and when recent contained only a small quantity of coagulated blood, without any concentric laminæ of fibrine.

From a consideration of the phenomena presented in the foregoing cases, taken in conjunction with those which have

(*a*) An excellent memoir has emanated from the pen of Dr. Bellingham, on the subject of "Venous Murmur," or the *bruit de diable* of the neck, in which, I think, he has completely established that the continuous sound generally heard is referrible to the veins, and the intermittent one to the arteries. Medical Press, February 23rd, 1848.

been already recorded by other observers, I think we are warranted in deducing the following generalizations:

1st. That the phenomena, presented by aneurismal tumours, and which become available as elements of diagnosis, are divisible into Extrinsic, or those dependent on the relations of the tumours to surrounding organs, and which are the results either of *eccentric pressure* or of *interference with sonoriety;* and Intrinsic, or those which depend on the actions proper to the tumour itself, being developed either by its *motor*, or by its *acoustic properties.*

2nd. That any possible combinations of the extrinsic signs are of themselves only sufficient to establish the existence generally of a tumour, but cannot be considered as adequate to decide its nature.

3rd. That consequently the study of the intrinsic phenomena, comprising both the impulses and sounds of aneurism, becomes of the highest importance, being equally valuable in regard to both internal and external aneurisms.

4th. That the impulses and sounds of aneurisms *follow* those of the heart, at an interval of time proportionate to the distance of the seat of disease from the centre of the circulation; and that they are not only not synchronous with, but often extremely different in character from those of the heart.

5th. That the results arrived at by several observers warrant us in concluding that, as a general rule, intra-thoracic aneurisms are accompanied by two distinct impulses and two distinct sounds.

6th. That almost invariably aneurisms of the abdominal aorta, or of its branches, and those which are situated on the vessels of the extremities, are attended with only a single impulse and a single sound(*a*).

7th. That there is a point to be yet determined, situated at

(*a*) With regard to the vessels of the neck and upper extremities, we are much in want of accurate observations on the precise nature of the intrinsic phenomena which their aneurisms generally present.

a certain distance from the centre of the circulation, on the cardiac side of which two impulses and two sounds may in general be expected to attend aneurisms, and on the distal side of which these tumours are generally characterized by a single impulse and a single sound; and that on the aortic trunk, the precise point at which the second impulse and second sound are lost is yet to be ascertained.

I shall next make a few remarks on the general characters of these motions and sounds, which present a good deal of similarity in the different forms, but yet, to the practised hand and ear, convey many indications that will be found valuable in estimating the precise conditions of the sac; and which, it may be affirmed, are sufficient to lead us not only to the ready diagnosis of aneurismal from all other tumours, but even to distinguish the true from the false aneurism, a question of the greatest moment in estimating the probable duration of life, as first suggested to me by Dr. Stokes.

The hand, placed over an aneurism, receives an expansive heaving impulse of considerable power, which is uniform at all points of the tumour, and may be readily ascertained to *follow* that of the heart. This is succeeded by the movement of retraction, first pointed out by Gendrin, during which the tumour gradually recedes from the surface, until, if situated in the thorax, it is again impelled against the hand with a shorter and more feeble shock, followed by a very brief interval of repose, during which the tumour is at its minimum of size, when a series of similar actions recommences. These impulses may be accompanied by the purring tremor or *frémissement cataire*, but this is by no means a necessary or even usual attendant on aneurisms; though, when developed *in* a tumour, and not present in the heart, it is a valuable indication that we have to deal with what is most probably an aneurism. A careful examination should in all cases be made as to its points of greatest intensity, and the direction in which it is propagated. In Dr.

O'Ferrall's case of mesenteric aneurism this sign was present, but seemed to occupy two distinct situations, having been at one time localized exactly to the line of the small vessel which crossed the tumour, and which was felt during life; at other times being perceptible in all parts of the aneurism. Now, of course, any tumour, for example, an enlarged mesenteric gland, carrying before it a branch of the superior mesenteric artery, would be as capable of producing the phenomenon as an aneurism.

On applying the stethoscope over an aneurism, the impulse or impulses are felt, and their force is often manifested in a very marked manner, by communicating visible and rhythmic movements to the head of the observer. A sound, moreover, is heard, which generally does not partake of the nature of *bruit de soufflet*, but may be described as the *bruit de choc*, a term aptly enough applied by Gendrin, to designate that undefinable sensation conveyed to the ear when one is uncertain whether it be a distinct sound or the result of the impulse which we mistake for sound. In cases of intra-thoracic aneurism, as I have before observed, the sounds are generally two, the first longer, fuller, and more readily audible than the second, which is generally abrupt. These sounds are capable of undergoing all possible modifications, and may be rasping, sawing, or blowing, perfectly independent of the character of the heart's sounds, as well shown by Dr. Bellingham's valuable observations on his sixth case, in which two sawing murmurs were heard in the aneurism, the heart's sounds being perfectly natural. The first aneurismal sound is very different in character from the first sound of the heart, which is also true of the second sound; and repeated observation has shown satisfactorily that both may diminish in intensity, or even become quite lost, between the sac and the heart. Accurate observations are yet wanted of the intrinsic phenomena presented by cancerous or other tumours of the mediastinum, but I think it is highly im-

probable that they could give origin to impulses and sounds corresponding in character and intensity with those here described.

M. Gendrin was the first, I believe, who directed attention to the fact that the true aneurism, or that by dilatation of all the coats, presents, in both its signs and symptoms, certain points of difference from the false aneurism, or that by rupture of the internal and middle coats. The true aneurism, even when intra-thoracic, he considers to be always accompanied by only one impulse and one sound, while the sufferings of the patient are, according to this author, confined in this form of the disease to a sensation of fulness and uneasiness under the sternum. In reference to the latter observation, I may state, that Dr. Stokes has been long in the habit of expressing a similar opinion in his clinical lectures. As to the phenomena of the impulses and sounds, I think they are more influenced by certain mechanical conditions of the sac than by the fact of the aneurism being true or false.

Since the time when the introduction of auscultation by Laennec revealed the existence of sounds in aneurisms, several theories have been brought forward to explain their causation. The impulses, though equally important phenomena, have been more neglected, indeed, the two have been often confounded, as the following statement of Hope fully proves: "The second sound of the heart is generally inaudible on the abdomen, and consequently the pulsation is simple;" yet he elsewhere speaks of pulsation and sound as different(*a*).

Dr. Stokes long since called attention to the existence of a second sound in thoracic aneurisms, but M. Gendrin was, I believe, the first who published an account of the second impulse, and propounded a theory for the explanation of both sounds and impulses(*b*). This theory Dr. Bellingham has endeavoured to refute in some observations appended to a series of

(*a*) Hope on the Heart, fourth edition, pp. 433, 416.

(*b*) *Revue Médicale*, December 1844.

ably recorded and most valuable cases which came under his own observation, and on which he very unsuccessfully attempts to found a new theory. As will be seen, his cases fully corroborate my observations as to the existence of double sound and impulse in thoracic, and single sound and impulse in abdominal aneurisms. The views of M. Gendrin and Dr. Bellingham, with regard to the production of the first sound, are very nearly identical. The latter says: "The sudden distention of the sac, which immediately succeeds the ventricular systole, of course gives rise to the impulse, and the friction of the blood against the parietes of the orifice of the sac, during this act, generates sound, and this constitutes the normal first sound of aneurism;" and further on, after an attempt to overthrow M. Gendrin's theory of the second impulse and sound, he proceeds to say: "If we consider the state of the sac of an aneurism when the ventricular systole ceases, it must be obviously then unfilled, at least it must contain less blood than during the systole. If the sac springs from the arch of the aorta, and this part of the vessel has become inelastic from previous disease, and the orifice of communication between the sac and the artery (which is a permanently open one) is of large size, we can easily understand that regurgitation of blood from the large arteries, which arise from the arch of the aorta, must take place into the sac at each diastole of the ventricle to occupy the vacant space; equally as when the aortic valves imperfectly close the orifice, regurgitation occurs into the left ventricle at each diastole. The mechanism by which the second impulse is produced is quite analogous to that which gives rise to the second sound." Again: "In aneurism of the abdominal aorta we have neither a double sound nor a double impulse, because a sufficient amount of blood does not regurgitate into the sac to generate a second sound, or to communicate a second impulse(*a*)."

This theory of regurgitation to explain the second impulse

(*a*) Dublin Medical Press, vol. xix. pp. 260, 340, 355, 371, 405.

and sound, I conceive to be utterly untenable; indeed in Dr. Bellingham's own cases we find evidence against it, for in only one case, viz., that of Butler, No. VI., has the phenomenon of visible radial, or carotid pulsation been noticed, while in two instances (Cases X. and XII.) the aneurism existed on the descending portion of the arch of the aorta, presenting posteriorly between the scapula and the spine, and yet was accompanied by double sound. Further, the experiments performed by me on my third and sixth Cases, show that on the one hand the recumbent posture and consequent obstacle to regurgitation had no influence on the second sound and impulse of thoracic aneurism; and on the other, that elevation of the lower limb, so as to favour regurgitation into the sac of a femoral aneurism by the force of gravity, was incompetent to produce the second impulse or second sound in this situation.

I shall now, in conclusion, proceed to present my own views on the mechanical conditions of an aneurismal tumour, required for the production of independent impulse and sound.

The force communicated by the heart to the column of blood in an artery, being propagated equally in all directions, becomes the principal agent in the production of aneurism, whether of the true or false variety, whenever deposit of atheroma, or any other morbid change, induces a weakened condition of the arterial parietes in any particular situation; and a dilatation of one or all the coats having been once effected, its influence becomes augmented, as the lateral pressure must now be estimated by multiplying the force with which the arterial current is moving, into the area of the diseased surface on which its action is exerted, and the latter being thus a constantly increasing quantity, the increase in the dimensions of aneurisms is, *cæteris paribus*, proportionably rapid. Before, however, the sac has acquired certain dimensions, whether it be a true or false aneurism, its motions and sounds must be considered identical with those of the vessel from which it springs. As the disease advances, it gradually assumes a

figure and dimensions totally different from those of the artery; the relations of the sac and the orifice of communication become more and more disproportionate; hence the current of blood, which may be considered as uninfluenced by the slight inequality of the arterial walls in the first stages of aneurism, has now a distinct lateral as well as an onward motion, and, according to the well-known hydrostatical law, the *vis a tergo* is propagated in both directions(*a*). Aneurism, whether true or false, is capable of assuming a variety of forms, of which the sacculated condition is, perhaps, the most common, in which a globular tumour with a somewhat constricted neck communicates with the vessel by an orifice very variable in size and in the smoothness and other qualities of its edges. On the figure of the sac and the nature of its walls will depend many characters of the motions and sounds, which, as will be shown, are principally influenced by the forces brought to bear on the sac.

For the production of the double impulse in thoracic aneurism, I am induced to consider the existence of such a sac as I have above described absolutely essential, and as I conceive that it may be present in either the true or false form, though *probably* less frequently in the former than in the latter, I am indisposed to agree with M. Gendrin, when he states that true aneurism is *always* accompanied by a single impulse and a single sound. Supposing then a sacculated aneurism of the thoracic aorta in contact with the parietes, the heart's action commences, and the systole of the left ventricle propels the blood into the aorta with a vigorous impulse, part of which is expended in causing the diastole of the arterial wall, and part being propagated in all directions, gives the blood both an onward motion into the arteries of the neck, and a lateral mo-

(*a*) The motions of thoracic aneurism may be often seen when the observer is at a considerable distance; the indications to be thus derived are very valuable, and have been well pointed out by the late Dr. Greene in his essays in the First Series of this Journal.

tion into the sac, communicating to the hand placed over it the sensation of the first impulse. The general elasticity of surrounding parts, and whatever force of this nature is possessed by its own walls (almost all living tissues possess some), come to react and a small portion of the blood is expelled from the sac, constituting the movement of retraction, immediately subsequent to which comes the systole of the arteries, which again impels some blood into the sac, and being thus again made to strike the hand, constitutes the second impulse. These causes may be also adduced to explain the occurrence of the sounds which I look upon as secondary in importance to the impulses. The ingress of each wave of blood into the sac may be readily conceived to be accompanied by sound; and in the condition of the orifice of communication, as to roughness, smoothness, projection of coagula, &c., we find adequate cause to explain the different modifications which they present.

If we now conceive an aneurism whose figure is not sacculated or spherical, the curvature of whose walls *gradually* loses itself on all sides in that of the arterial parietes, the whole presenting a fusiform shape, and especially if it retain the middle coat, as in true aneurism, we have a tumour quite adapted for conveying a powerful first impulse when the ventricular systole comes to act on the column of blood; but the divergence being little, the walls of the aneurism may react simultaneously with those of the artery, and we thus lose the second impulse, while the second sound may or may not be present, as it is dependent on the condition of the internal surface of the vessel, which, if rough and uneven, may cause a first sound as the blood passes over it after the ventricular systole, and a second when the arterial systole again impels the column onwards. Thus, then, if the aneurismal systole be strong and simultaneous with that of the arteries, so that both act as one, we lose the second impulse in thoracic aneurism, while the second sound may or may not be present. If, therefore, true aneurism be less likely to assume the spherical figure than false, the absence of the

second impulse may, perhaps, be available in approximating to a diagnosis between these two forms of the disease, especially if combined with the observations of Stokes and Gendrin as to the less degree of suffering in the true. The explanation I have given of the impulses and sounds of thoracic aneurism agrees very nearly with that of Gendrin, who, however, states that they are to be found in the abdominal form also. I know, however, of no recorded case of double impulse of abdominal aneurism, though I have alluded before to some cases in which a double sound was heard. An explanation of the absence of the second impulse, and, except in rare cases, of the second sound, in this form of the disease, may be deduced, I think, from the following considerations.

The column of blood in the arch and superior part of the thoracic aorta must be considered as subject to two forces acting at an appreciable interval, viz., the ventricular and arterial systoles, whose influence must be supposed to be combined and simultaneous on particles of blood at a distance from the heart; for in no other way can we explain the single pulsation of the carotid, femoral, and radial arteries. The sequence of actions may be considered to take place as follows. The blood contained in the arch of the aorta, receiving an impetus from the left ventricle, is set in motion towards the extremities, but, before it can be propelled to any great distance, it receives the additional impulse of the systole of the first portion of the aorta, and now continues its course impelled by the combined influence of two forces, that of the ventricular systole being, as it were, overtaken by that of the arterial. It is highly probable that these forces become thus simultaneous in their action in some part of the descending thoracic aorta, and that the ordinary impulse of the abdominal aorta and its branches, as well as that of the carotid, radial, and femoral, is single. Indeed that of the ascending portion of the arch is most probably single also, and it is only when a lateral diverging current is produced into an aneurismal sac, that the arterial systole

manifests itself by giving a second impulse. The systole of the arteries here mentioned is caused by the elasticity of their walls(*a*). If their contractile powers should be brought into action by deranged nervous agency, the phenomena of local arterial pulsation, dicrotous pulse, &c., can be explained. The single impulse of abdominal aneurism, therefore, may, I think, be justly referred to the combined and simultaneous action of the ventricular and arterial systole; while the occurrence of two sounds may be accounted for, the first and normal one by the entrance of the blood, the second, so rarely heard, by the egress, produced by an elastic state of the sac, an explanation which seems corroborated by the condition of the parts in the popliteal aneurism shown me by Mr. Wilmot, which was of the true form, not filled with fibrine, and certainly capable of reacting on its contents.

Art. XII. — *Observations on Hemorrhage.* By J. Moore Neligan, M. D., M. R. I. A., Physician to Jervis-street Hospital, and Lecturer on the Practice of Medicine in the Dublin School of Medicine.

Probably the most frequent symptom and consequence of organic disease is the occurrence of hemorrhage from the blood-vessels of the lungs, the stomach, or the intestines. Much stress is consequently laid upon it as a diagnostic mark of structural changes in these viscera, in the heart, and in the liver; and there can be no question but that, in doubtful cases, it often aids materially in leading to a just conclusion. Yet, valuable a symptom as it is it must be sometimes regarded and treated as

(*a*) With referrence to the arterial systole, I have considered it as due to the elastic force only of the middle wall, called into play after its distention by the portion of the ventricular systole expended on it; but many circumstances induce me to agree with the opinions of Henle, Weber, and others who have demonstrated that a power of active *contraction* resides in the arterial wall, and which is due to the presence of muscular fibre.

a disease *per se;* and although such a view of hemorrhage cannot be looked upon as pathologically correct, therapeutically considered it often leads to the best results as regards treatment.

When hemorrhage to a moderate degree recurs at intervals, and is manifestly dependent on the existence of organic disease, it is, of course, most effectually controlled by the employment of remedies calculated to relieve the condition on which it depends; but when it takes place suddenly to any considerable extent, the immediate indication of checking it must be fulfilled by means more directly applied. It is in consequence of this that hemorrhage is so much more commonly treated as a disease than as a symptom, and that effectual plans for stopping it are so anxiously sought after.

Apart from direct injury, the most common cause of bleeding is congestion, and it therefore occurs generally from the surface of mucous membranes in which the venous system is much developed and liable to sudden alterations in the quantity of blood circulating there. Hematemesis, melæna, and hemoptysis, are consequently the forms under which symptomatic hemorrhage most frequently takes place; and it is by epistaxis, or by bleeding from hemorrhoids, that nature most commonly finds a means of relieving congestion not dependent on organic disease.

Hemorrhage from the mucous membrane of the digestive organs is sometimes the earliest symptom by which attention is directed to the existence of organic disease in the abdominal cavity; but it more usually takes place after more direct symptoms had been long previously recognised, and not uncommonly is the mode by which life is terminated in these affections. Under every circumstance it is highly alarming, and calls for the most prompt and energetic treatment. This is especially the case when it occurs in the form of hematemesis, as it is then with more difficulty controlled, and is more apt to recur, than when there is simply melæna; this seems to

depend on the size of the stomach compared with that of any of the intestines, permitting a much larger accumulation of blood in its cavity before it contracts on itself, which is evidently the natural mechanical method by which the bleeding is checked.

In the administration of remedies to stop the hemorrhage, the chief indication to be fulfilled is therefore manifestly to produce contraction of the stomach, whether the bleeding be symptomatic of organic disease or not. With this view we should be guided in the choice of styptics or astringents, and they should be administered in a concentrated form, or rather as little diluted as possible, so as not to distend the stomach. In hematemesis or melæna I place most reliance on oil of turpentine as a styptic, and on gallic acid as an astringent; the former, by its stimulant property, excites the stomach and intestines to contract, and the latter may be given in the solid form, and is very powerful in small doses. Ice has been often prescribed to check hemorrhage from the stomach; but its tendency, when dissolved, to distend the organ, and to favour further bleeding by diluting the blood that may have previously escaped from the vessels, constitutes, I think, a very serious objection to its employment. As to blood-letting, it is only admissible in those few cases where the hemorrhage seems to be dependent on general plethora, and even in these must be regarded rather in the light of after-treatment than of an immediate remedy.

The diet in all cases of hemorrhage from the stomach or intestines must be absolute. Nourishment should be given in a concentrated liquid form, perfectly cold, and in the smallest quantities at a time; and a return to the usual articles of diet should be permitted with the utmost caution.

The following case will illustrate more fully the most important points in practice which are above noticed. It is also an example of what may be termed the idiopathic form of gastro-intestinal hemorrhage, which sometimes occurs in per-

sons of a spare habit of body, apparently in the enjoyment of good health, and without any signs of the existence of organic disease.

Mr. D., aged 43, of middle height, rather slight make, and sallow complexion, subject to occasional laxity of the bowels for the last two years, but otherwise in the enjoyment of good health, was attacked on the 8th of April, 1849, with diarrhœa and vomiting; the evacuations were watery and attended with tormina, and the vomited fluid seemed to contain much bile. He could assign no cause for the attack. On the following morning, the 9th, he vomited blood, and also passed some by stool. He was now seen by Mr. Oldham, who prescribed acetate of lead and opium for him. On the third morning he was awoke at 6 o'clock, A. M., by a recurrence of the bloody vomiting, which was represented as having been very copious, amounting to more than a pint of pure blood, and he also passed some blood by stool immediately afterwards. On the same day, at half-past 4 o'clock, P. M., he was again attacked with vomiting and purging of blood; and at 6 o'clock, P. M., I saw him for the first time.

The blood which he had last vomited was shown to me; it was grumous, of a blackish-red colour, and amounted to a pint and a half; that passed by stool was nearly similar in appearance, somewhat darker coloured, amounted to two pints, and was totally unmixed with fæcal matter. He was at this time exceedingly weak, and inclined to faint if he raised his head off the pillow; the whole surface of the body was blanched; the pulse intermittent, 120, very feeble and compressible, and dicrotous; the abdomen was tumid, pressure on it did not cause pain, but produced much borborygmus; the feet and hands were cold; and he complained of intense thirst. He was ordered to take immediately a draught consisting of thirty minims of oil of turpentine, a drachm of mucilage, and three drachms of water, and in an hour afterwards a pill containing two grains of gallic acid: the draught and pill to be repeated

alternately every hour. He was allowed to sip occasionally, but in very small quantity at a time, raspberry vinegar and ice-cold water, one part of the former to four of the latter; and a tea-spoonful of cold strong beef tea was directed to be given to him every ten or fifteen minutes. Hot jars were applied to his feet; and he was ordered to be kept as quiet as possible, and to remain in the recumbent position. I saw him again in six hours afterwards, when the pulse was 110, less intermittent, still dicrotous, but a little fuller; he had no return of the bloody vomiting or purging, had slept at intervals, and expressed himself now as feeling stronger. The draught and pills were directed to be continued, and the nourishment and drink as before.

April 11th, fourth day. At 6 o'clock, A. M., the vomiting and purging of blood both returned; the quantity was very much less, not exceeding altogether a pint and a half; it was also very much darker in colour. The pulse was 96, irregular, feeble, less compressible, and not dicrotous; the abdomen was soft and not tumid. He slept occasionally during the night, and felt much stronger. The cold beef tea was directed to be given in larger quantity and with greater frequency, but no other article of nourishment was allowed. The draughts and pills were ordered to be taken every third hour alternately. At 5 o'clock, P. M., the pulse was 84, improved in every respect; and there had been no return of the hemorrhage. The pills and draught were ordered to be continued as in the morning.

April 12th, fifth day. No return of the hemorrhage; he had slept several hours during the night, and had gained strength; the pulse was stronger and less compressible, 94. He was now allowed a more liberal diet, but everything was still directed to be taken cold. In the evening an enema consisting of two pints of tepid water was administered; it brought away some very dark grumous blood.

April 14th, seventh day. The bowels have not yet been

moved naturally; but he has gained much strength, and is able to sit up in bed for a short time. He was ordered two cathartic pills, consisting of seven grains of compound rhubarb pill and a grain of extract of hyoscyamus; and one of the gallic acid pills to be taken twice daily; the turpentine draughts to be omitted.

April 15th, eighth day. The pills not having operated, the tepid water enema was ordered to be repeated; it acted freely, the evacuations were dark, but contained much natural feculent matter.

April 16th, ninth day. Bowels moved naturally; gaining strength rapidly; sleeps well; appetite good; able to get up for some hours. All medicines were discontinued.

From this date he quickly regained his usual health, and has since remained quite well, nearly twelve months having elapsed; but he has not quite lost the blanched appearance consequent on the hemorrhage.

This seems to have been a case of simple hemorrhagic exhalation from the mucous membrane of the stomach. After the recovery of the patient I examined him with the greatest care, but could not detect any evidence of the existence of organic disease; and had any existed it is almost certain that, in the interval which has since elapsed, it would have been manifested by the occurrence of some of the ordinary symptoms. The quantity of blood lost was very great; from the account given me by the gentleman's wife, a highly intelligent lady, and from what I saw myself, it could not have been less than eight pints in the first three days of his illness. The efficacy of the plan of treatment adopted was proved by the rapidity with which the hemorrhage was checked, and by his ultimate recovery without any return of the bleeding.

I regard gallic acid as our most valuable astringent in hemorrhage from the mucous membrane of the digestive organs, from the uterus—in many cases of bleeding from which I have seen it prove of the greatest service, and from the urinary organs;

of the latter two interesting cases in which its efficacy was shown, are related by my colleague, Dr. J. S. Hughes, in this Journal(*a*). When the case I am now about to describe occurred, I was not aware of its decided effects in controlling hemorrhage from the stomach; I therefore trusted to oil of turpentine alone. It is an example of hematemesis dependent on organic disease of the liver, by which life was terminated in a few hours.

James Fletcher, aged 32, was admitted into Jervis-street Hospital, November 18th, 1843. It was stated that he had been suddenly attacked with vomiting of blood about an hour ago, it being now 4 o'clock, P. M., which had continued since almost without intermission. I saw him about half an hour afterwards; he was then very feeble, quite blanched, his voice reduced to a mere whisper, the extremities cold, and the pulse scarcely to be felt at the wrist. He had vomited nearly four pints of fluid blood since his admission, and it was now coming up almost continuously in mouthfuls. He was immediately ordered an ounce draught containing thirty minims of oil of turpentine and a drachm of mucilage, and one such to be repeated every fifteen minutes; hot jars to his feet, and sinapisms to his legs; and to be allowed to sip ice-cold water. The vomiting of blood was not in the least controlled, and he died about two hours after his admission. On *post mortem* examination, the liver was found in a very advanced state of cirrhosis, the spleen enormously enlarged, and large patches of the mucous membrane of the stomach congested with blood; but, as is usual in these cases, no rupture of any vessel could be discovered(*b*).

(*a*) New Series, vol. iii. p. 275; and present Number, p. 309.

(*b*) This was the first case of three which have fallen under my observation in which there were a much atrophied cirrhosed liver and an enlarged spleen, without any dropsical effusion into the abdominal cavity. Fletcher had been twice previously in Jervis-street Hospital under my care. On April the 10th, 1843, he was first admitted; he then stated that he had lived an

Hemorrhage from the lungs occurs most frequently as a consequence of tubercular disease; but it also takes place, and I think more frequently than is commonly believed, as the result of simple congestion. When it is caused by organic disease of the heart or of the abdominal viscera, the bleeding takes place most usually into the substance of the lungs, constituting pulmonary apoplexy; we may or may not have hemoptysis as an evidence of the latter, but when it does occur it is generally to a small extent.

Hemoptysis, from what I have termed simple congestion, is described by most writers as dependent on general plethora, or a superabundance of blood in the system, and it certainly does occur most frequently in individuals thus characterized; but I have seen it not unfrequently in persons of a spare and apparently anemic habit of body, who did not present the least trace of tubercular or other organic disease.

Its treatment when dependent on this cause is sufficiently

irregular life, working occasionally very closely at his trade, but always in the habit of tippling—drinking almost every day two or three glasses of raw whiskey, and getting drunk once every month or six weeks. He had never been ill so as to be confined to bed, but sometimes suffered from pain in his right side, and dyspeptic symptoms. At this date his ankles were œdematous, but only so in the evening; the swelling disappearing almost completely after the night's rest. The spleen was felt to be much enlarged, and the liver, which was very small, could, by careful manipulation, be distinguished as nodulated on the surface, the abdominal parietes being exceedingly thin and lax. I therefore diagnosed the case as one of cirrhosis, although the most marked symptom, according to the then received opinion, namely, ascites, was absent, and, moreover, the spleen was enlarged. He left the hospital in a week, as he said that he felt quite recovered; the only treatment adopted having been the administration of mild mercurial purgatives. He was readmitted on November 11th, having, according to his own account, spat up some blood that morning, but he left hospital the same evening. And his third admission was on the occasion narrated in the text.

The second case was that of a woman who died in the hospital a few days after her admission. She had cancer of the uterus, fatty heart, cirrhosed liver, and enlarged spleen. I could not learn anything of her previous history, but there was no dropsical effusion in the abdominal cavity at the

simple: local bleeding from the surface of the chest by cupping, or general blood-letting, the former of which I prefer in all cases; the administration of saline cathartics in active doses; rest, especially of the respiratory and vocal organs; and low diet for a few days.

I have met with several cases of this congestive hemoptysis, in which the bleeding continued to an alarming extent, the result of which has proved, now that some years have elapsed, that the hemorrhage was not caused by the presence of tubercles in the lungs. I cannot, therefore, but think that Louis was much in error when he made the following statement, which, if correct, would necessarily lead to a very unfavourable prognosis in every instance: "It is impossible, as it appears to me, not to admit that, with a few unfortunately too rare exceptions, hemoptysis, when at all severe, denotes tuberculous disease of the lungs"(*a*). In one instance, that of a medical friend, I have his own authority for stating, that more than twenty years have

time, nor did the *post mortem* appearance evidence that there ever had been any.

The third case was that of a stout man, aged apparently about 45, who was brought to the hospital from the steam-packet quay in a state of collapse, caused by exposure to cold on the deck of a steam-packet, on his passage from Liverpool on the preceding night. He died about an hour after his admission, and nothing could be learned of his previous history. The *post mortem* examination revealed a much cirrhosed liver, the gall-bladder containing many gall-stones, and an enlarged spleen, but no traces of peritoneal dropsy.

Casts of both liver and spleen of the first and last cases are in the Museum of the Dublin School of Medicine.

My friend Dr. Lyons has recently exhibited before the Pathological Society of Dublin, a specimen of cirrhosis of the liver with enlarged spleen, which he found in a male subject in the dissecting-room, in whom there were no traces of ascites. This was the second instance that had come under his observation: the details of the first were inserted in the Dublin Medical Press in last December. In both an attempt had been made to establish a collateral circulation; in the former by the rachidian sinuses and the vena azygos, and in the latter by the diaphragmatic veins.

(*a*) Louis on Phthisis, Sydenham Society's edition, p. 168.

now elapsed since he suffered from an attack of severe and protracted hemoptysis, and that he has never had the least symptom of the presence of tubercles in the lungs: he is at present in the enjoyment of the most robust health.

An illustrative example of this form of hemoptysis occurred in my practice about three years since. A gentleman, aged 20, who had been for some years an hospital pupil of mine, rushed hastily into my study, and showing me his pocket handkerchief, which was dyed with red blood, said that, while walking quietly along the street, he suddenly felt a tickling in his throat which compelled him to cough, and on expectorating he perceived that he spat up pure blood; the cough and hemoptysis continued, and before he reached my house, a period of time which could not have exceeded ten minutes, he conjectured that he must have expectorated at least six ounces of blood. He was blanched, evidently with terror, when he came to me, and the hemoptysis was then very profuse; his pulse was full and hurried, and his respiration quick. On examining his chest, a coarse gurgling rhoncus was to be heard in the large bronchial tubes, but there was not the least dulness on percussion, and the vesicular respiration was healthy; he had never previously suffered from cough. He stated that latterly he had been leading a sedentary life, indulging rather freely, and smoking somewhat to excess, and that within the last few months he had grown very full. I immediately had sixteen ounces of blood abstracted by cupping over the surface of the chest; and directed him to take an active saline cathartic draught, containing sulphate of magnesia and dilute sulphuric acid. The hemoptysis quite ceased in the course of that evening, and has never since returned; he is now an assistant-surgeon in the army, and in the enjoyment of excellent health. The only further directions given to him at the time of the attack were to live low for some days, avoid every cause of excitement, and keep the bowels acting by the occasional use of the draught that had been ordered for him.

Hemorrhage from the back of the pharynx may be mistaken for the hemoptysis of congestion of the lung, and the throat should therefore be carefully examined in every case of spitting of blood. A lady whom, for some years back, I have occasionally attended for relaxed sore throat, with follicular enlargement of the pharynx and tonsils, has suffered at three different periods from hemorrhage from the throat. The first attack that I witnessed occurred about two years since, and was evidently caused by walking for some time *against* a cold north-east wind. The bleeding lasted for several hours; and on examining the pharynx with the mouth speculum, I could see the blood trickling from the surface. Irritating the epiglottis as it flowed downwards, it was brought up with a cough, and, being of a florid colour, the case might be easily mistaken for one of hemoptysis. The hemorrhage was readily checked on this and on a subsequent occasion, when it was apparently produced by a similar cause, by the application of a solution of nitrate of silver, containing a drachm of the salt to the ounce of distilled water.

Hemoptysis, when dependent on tubercular disease of the lungs, is, in most cases, an early symptom, especially when it occurs to any extent; yet it not unfrequently takes place subsequently to softening, but the bleeding is then very rarely excessive. The reasons for these facts are so well known that I need not here enter into any account of them. It seldom proves fatal in phthisis, although it is often very alarming; but as it tends to weaken the patient much, and thus render the further progress of the disease more rapid, it is an object of importance with the physician to check the bleeding as quickly as possible. The treatment to be adopted while the hemorrhage is going on is sufficiently simple, but there is a practice very commonly adopted, and which bears the sanction of many eminent names, that I think cannot be too much condemned; I refer to the application of cold externally to the surface of the chest: the injurious effect it must produce, by causing a de-

termination of blood to the internal organs, is sufficiently manifest. General or local blood-letting is admissible in but very few cases,—those in which there is evident plethora of the entire circulating system.

The plan of treatment which I have found most successful is the following: the patient should be placed in a cool bed, with the shoulders well raised, and in warm weather near an open window; the vegetable refrigerant astringents freely administered; acidulated saline cathartics prescribed; and the surface of the chest *dry-cupped.* The strictest quiet must be enjoined, and the least exertion of the voice prohibited. The following case of phthisical hemoptysis,—the severest, as regards the quantity of blood lost, that I have ever witnessed,—will illustrate these remarks. It was reported by Mr. Fitzgibbon.

Bridget Brannagan, aged 36, a servant, was admitted into Jervis-street Hospital, November 5, 1849. She had suffered for some time from cough, pain in the side, shortness of breath, and occasional fits of impending suffocation. On this day, while working very hard, washing clothes, she was suddenly seized with an attack of difficulty of breathing and spasmodic cough, which ended in the expectoration of florid frothy blood: what was first spat up she says was black. The bloody expectoration, with a short cough, has continued without intermission for some hours; the quantity of blood lost, according to the account of her friends, amounting to nearly six basinfuls. On admission it is reported that her countenance was blanched, haggard-looking, and anxious, her forehead covered with a cold clammy perspiration, and her pulse weak and tremulous, scarcely to be felt at the wrist. She was at once placed in bed with the shoulders well elevated, and heaters were applied to her feet. Mr. Magrath, the resident apothecary, ordered her a mixture containing acetate of lead and acetum opii.

On the next morning I saw her for the first time; the hemoptysis continued throughout the night without intermission, and the quantity of blood expectorated very nearly filled a

large wash-hand basin; it was frothy, and of a bright florid colour. The entire surface of the body was bloodless, icy cold, and covered with clammy perspiration; the voice was low and whispering, scarcely to be heard; and the prostration was extreme. The pulse could not be felt at the wrist; in the carotids it was dicrotous, irregularly intermittent, 120 in the minute. She was ordered to take an ounce, every hour, of a mixture containing two ounces of distilled vinegar, an ounce of treacle syrup, and five ounces of water; and the surface of the body and extremities were directed to be kept warm.

On the third day it was reported that the hemoptysis had been gradually decreasing since the previous evening; the pulse could be felt at the wrist, and the surface of the body was warm. On examining the chest, there were physical signs evidencing tubercular consolidation beneath the right clavicle, and in the left dorsal region. She was ordered to be dry-cupped over the chest anteriorly and posteriorly, the mixture to be continued, and a cathartic draught, containing sulphate of magnesia and dilute sulphuric acid, administered.

From this time she gradually improved,—the hemoptysis having quite ceased on the fourth evening,—until the seventh day after her admission, when she was attacked with pleuritic stitches, vomiting, and a return of the hemoptysis, but not at all to the same extent as before. The mixture was again repeated, with the addition of a drop of creasote every second hour, the dry-cupping again applied, and the acidulated saline cathartic as before administered. To this treatment the symptoms yielded at once, and the hemoptysis did not again return while she was in hospital, which she did not leave until December 9, having suffered from the ordinary symptoms of phthisis, especially hectic and colliquative sweats.

When the bleeding takes place into the substance of the lung, it generally gives rise to the group of symptoms denominated pulmonary apoplexy; this, as I have before said, may or may not be attended with hemoptysis. It is usually a conse-

quence of organic disease of the left side of the heart, which produces engorgement of the blood-vessels of the lungs, giving rise to dropsical effusions in the old, the broken-down, and the debilitated, and to hemorrhage in the young, the strong, and the plethoric. I have, however, frequently seen this disease occur in individuals who had no organic disease, in whom it was, apparently, produced by cold, over-exertion, or any other cause which might produce congestion of the pulmonary vessels. This form of hemorrhage very rarely proves as suddenly fatal as cerebral apoplexy sometimes does; I have been able to find only two cases on record in which it did so; but I have recently seen an instance in which immediate death was caused by it, as far as could be judged from the symptoms, there having been no examination after death. This was the case of a young married lady, nineteen years of age, who had been always, as I was informed, in the enjoyment of excellent health; she had been four months married, and had aborted a month previously, the abortion being attended with much hemorrhage, which weakened her exceedingly, so that she had not left her room until the evening of her death. She spent that evening in the drawing-room with her family, in the enjoyment of restored health, and in the highest spirits; she sang a great deal, being the first time she had exerted her voice since her illness, but did not complain of fatigue. On retiring to her bed-room she sat down at the fire talking to her husband, when she suddenly complained of feeling weak. He immediately placed her on the bed, when she gave a few convulsive sobs and never moved afterwards. I was immediately sent for, and saw her in about twenty minutes; the surface of the body was then nearly cold, and very pale, and the mouth was partly filled with frothy bloody serum. I opened the jugular vein, from which about a drachm of blood flowed; but she was at this time quite dead.

As regards the treatment of pulmonary apoplexy, I have not any new facts to offer. The plan I have found most suc-

cessful will be best illustrated by the narration of a few cases. The first is especially interesting from the fact that the man was twice under treatment; on the second occasion he succumbed to the disease shortly after admission into the hospital, and the appearances presented by the partially absorbed clots of the first attack were well exhibited, and proved the correctness of the diagnosis then made. The case was reported by Mr. Farmer.

Charles Farrell, aged 34, by occupation a dealer, was admitted into Jervis-street Hospital, June 17th, 1845, affected with spitting of blood, accompanied by intense pain in the lower part of the right side. He states that the hemoptysis commenced three days ago, and has continued since, but not to any extent, not more than a cupful of blood being spat up daily. The pain is of a dull character, but severe, yet little aggravated by taking a deep inspiration; he cannot ascribe his illness to any particular cause, except his having had inflammation of the lungs about six months ago, from which he never recovered completely. There was no fever about him; the surface of the body was cool, and the pulse 84, compressible; but he was dull and heavy, answering slowly and stupidly the questions put to him. On examining the chest, well-marked dulness was audible over the middle of the right dorsal region, in which part the respiration was feeble, and accompanied by a coarse crepitant ronchus, not regular or constant. The sputa, which consisted almost entirely of blood, adhered to the sides of the spitting-cup.

The disease was diagnosed to be pulmonary apoplexy. He was ordered to be cupped to sixteen ounces from the dorsal regions of the chest, and to take a pill containing two grains of calomel and a fourth of a grain of opium night and morning.

June 22nd, fifth day from admission. There has been a gradual improvement in all his symptoms, and the quantity of blood in the sputa is very much diminished. A blister was applied to the right side.

On the sixth day the blood had nearly disappeared from the sputa; the cough was less troublesome; and all the physical signs, except the dulness on percussion, were much diminished: he was slightly salivated. The pills were directed to be omitted, and the blistered surface to be dressed with mercurial ointment.

July 1st, fifteenth day. He was discharged from the hospital. The hemoptysis had quite ceased for some days, but there was still some dulness on percussion, with bronchial respiration and weak vesicular murmur over the right dorsal region.

This patient was re-admitted on the 26th of November following. He was partly unconscious, and, from the account given by his wife, who accompanied him, it appeared that he remained well, except occasional cough, but no hemoptysis, until two days since, when he suddenly became insensible after having spat up about a cupful of blood. The vesicular respiration was very feeble in every part of the chest; there was a general coarse mucous ronchus; and over the left scapular region there were complete dulness on percussion and bronchial respiration. The dulness over the right lung, where it had existed when he was previously in hospital was now very trifling. The same treatment was used as when he was formerly in the hospital, but he died in a little more than forty-eight hours after admission.

On examination after death the bronchial tubes of both lungs were found to be filled with frothy bloody serum; the superior posterior portion of the lower lobe of the left lung contained a recent apoplectic clot of blood as large as a man's fist, and there were three smaller clots in the lower posterior part of the upper lobe. In the right lung the upper portion of the lower and the inferior portion of the middle lobes contained each in their posterior part, the remains of large clots which had partially undergone absorption. They were of a reddish-

yellow colour on their circumference, dark red in the centre; the lung surrounding them was apparently sound. The heart and other viscera were in a perfectly healthy condition.

This case differed in many respects from most others that I have seen, but especially in the extent to which the hemoptysis occurred, and in the absence of unconsciousness in the first attack, which I believe depended on the blood escaping outwardly through the bronchial tubes. The other general symptoms and the physical signs were, however, so well marked as to prevent any difficulty in the diagnosis. The following is an example of the more ordinary form in which the disease is presented to the physician. It was reported by Mr. George C. Cotter.

James Bell, aged 30, was brought to Jervis-street Hospital November 23, 1847, in an insensible state; the extremities cold, and the pulse scarcely to be felt at the wrist. The persons who brought him in stated that he had been found lying on the Drogheda Railway, on which he was a labourer, and that they knew nothing of him, but supposed he had been bruised between two trucks. He was consequently admitted into the accident ward, under the care of Mr. Power, the surgeon on duty, and the usual remedies having been applied to restore animation, after some perseverance circulation was re-established in the extremities, when some consciousness quickly returned. He was, however, unable to give any information as to what had happened to him, but was positive that he had received no injury of any description. He mentioned, however, that he had been suffering from a slight cold for two days, and that during a part of each day he slept on the top of a truck in the open air, exposed to the inclemency of the weather, which was at this time very severe. There being no evidence of any injury after the most careful examination, the patient was transferred to the medical wards on the next day.

His countenance was at this time pallid and indicative of distress; the pulse very small, weak, and compressible, 80; the

breathing short, but not hurried; and morbid heat of the whole surface of the body. On making a stethoscopic examination, the following physical signs were manifested; puerile respiration in the sub-clavicular region of the left side, extending over more than half of the anterior surface of the chest; some dulness on percussion in the mammary, and complete dulness in the lateral and dorsal regions of the same side, with absence of respiratory murmur and bronchial respiration. The sounds of the right side were normal, both on percussion and auscultation. It was evident that he expanded the right side of the chest more than the left during each inspiration. There is no cough, but early this morning he expectorated one small coagulum of black blood. Previously to my seeing him, some leeches, and afterwards a small blister, had been applied to the left side. He was now ordered six ounces of wine, and to be dry-cupped over the whole of the left lung, except where the surface was sore from the blister.

November 25th, third day. He appears to suffer less; the breathing is more prolonged, twenty in the minute; the pulse still weak, 80; the tongue brown in the centre and white at the edges and tip; the face flushed. The vesicular murmur has in some degree returned in the left inferior dorsal region, but it still sounds dull on percussion. The right lung is somewhat affected to-day, sounding somewhat dull in the inferior lateral region, with an indistinct crepitant ronchus where the dulness ceases. He complains of pain in the left side; but he has not the least cough. Ordered to take, every six hours, a pill containing two grains of calomel, and a third of a grain of opium; the wine to be repeated.

November 26th, fourth day. Much improved; the pulse has regained its strength, and the breathing is full, 17 in the minute; the vesicular murmur is still very feeble in the parts before noticed, but there is rather more resonance on percussion. A large blister was ordered to be applied to the right side, and the pills to be continued. To have full diet.

November 29th, seventh day. It is reported that the patient is improved in every respect. He has been up for the last two days; the vesicular respiration is rather more distinct, but the dulness still exists; he is slightly under the influence of mercury; the pills were ordered to be discontinued.

December 1st, ninth day. He was discharged from hospital to-day, as he said that he felt quite well and able to work. There is still dulness, and some bronchial respiration over the left dorsal region.

In this case the hemorrhage into the lung, and the consequent pulmonary apoplexy, which was so well marked, seems to have been caused by prolonged exposure to cold; for there was not the least indication of organic disease of the heart.

The following is an example of the same affection produced by a violent strain:

Richard Tuite, aged 40, a labourer, was admitted into Jervis-street Hospital, November 17th, 1849. He states that as he was carrying a deal plank on his left shoulder up an inclined plane, on the 8th instant, in the Custom House Yard, his foot slipped, and, in endeavouring to save himself from the plank, which fell off his shoulder, he got a severe strain of his left side. He was taken up in a state of insensibility, but revived in a few minutes on the application of cold water to his face and chest; he suffered severely from difficult breathing and pain in the side for the next four days, so much so as to confine him to bed, and on the fifth day he began to spit blood of a dark colour, and in clots. He has been in the army, and served several years in India; while there he was profusely salivated for disease of the liver, and for chronic rheumatism: for the latter disease he was discharged from the service.

On admission into hospital his face and head were congested, his lips livid, and eyes suffused; he complained of great debility and loss of appetite. The respiration was slow and laborious; the pulse feeble, compressible, 80. Altogether he presented the appearance of a person in whom reaction was

not fully established after an accident. Percussion elicited a dull sound over the axillary region, and over the adjacent parts of the mammary and dorsal regions, of the left side. In these parts the vesicular respiration was absent, but bronchial respiration and bronchophony were distinctly marked; there was puerile respiration in the other portions of the left lung; the sounds in the right side were normal. The expectoration was rather scanty; it consisted of a very adhesive bloody mucus. He was ordered to take a pill containing two grains of calomel and a fourth of a grain of opium every sixth hour; and to be dry-cupped over the left side of the chest. This man improved rapidly: on the third day after his admission a blister was applied to the side, and the blistered surface was dressed with mercurial ointment; on the fifth day he was slightly salivated, when the pills were omitted; and on the tenth day he was discharged at his own request, as he felt quite well. Dulness on percussion, and bronchial respiration were, however, still audible in the same parts as before, but to a less extent, and not so well marked.

Before concluding these observations, I wish to notice another form of hemorrhage, namely, that which occurs in individuals of what is termed the hemorrhagic diathesis, which so invariably proves fatal, and of which we know so little, either of the pathology, causation, or treatment. I refer to it at present more with the view of adding an additional case to those already on record than of proposing any theory regarding it. I believe it to be an aggravated form of purpura, in which the blood transudes freely through the mucous membranes, instead of being effused beneath them or the skin, as in that disease; and from my experience of the cases of it—but few in number, however—which I have seen, I do not think the plan of treatment by large purgative doses of oil of turpentine, which I found to be so useful in purpura hæmorrhagica(*a*), is appli-

(*a*) Dublin Journal of Medical Science, First Series, vol. xxviii. p. 189.

cable to this form. The following case was reported by Mr. J. E. Dyas.

Ellen Seery, a servant, aged 18, was admitted into Jervis-street Hospital, November 8, 1847. She states that about a month since, while standing at the kitchen fire in the evening, she was suddenly seized with pain in the back, stomach, and head, when she became insensible, and remained so for some minutes; the pain continuing in her head for more than an hour. She then fell asleep, and awoke in the morning quite well. In a week afterwards she was again attacked with pain in her head and back, which was followed by bleeding from the nose and gums, but as it did not prevent her from working, she did not seek for medical advice until the present, when she was compelled to do so from extreme debility, which has been daily becoming worse, the bleeding having continued for the last three weeks. Her menses have been perfectly regular. She never heard that any of her family had been subject to hemorrhages.

On admission, she was exceedingly feeble; the surface of the body completely blanched, the lips even being quite pallid; and she was inclined to faint on the least exertion. The pulse was very small and compressible, 90, not dicrotous. The respiration hurried, and the voice weak. There was a continued oozing of blood from the nostrils and from the gums; the latter, when wiped quite dry, were, in a few seconds, covered with black blood, which could be seen to exude from innumerable points, and when left to herself she was almost constantly removing clots of blood from them with her fingers. Her appetite was bad, and her bowels had been confined for the last three days. She was ordered a draught, containing half an ounce of sulphate of magnesia in two ounces of the acid infusion of roses; and to have strong beef-tea constantly. The next day the bleeding from the nostrils ceased, but seemed to be rather more copious from the gums. She was ordered to use a concentrated solution of alum as a gargle; and there be-

ing extreme debility, and a constant tendency to faint, to have four ounces of red wine and a tumbler of porter; the latter at her own request.

On the fourth day after her admission, November 12th, the bleeding did not seem to be in the least degree checked; it was only from the gums, in which there could not be discovered the slightest abrasion. The debility was very great, the pulse dicrotous, 90, feeble and compressible. She was ordered to take, every second hour, a draught containing half a drachm of oil of turpentine, half a drachm of mucilage, and two ounces of water; and to have six ounces of red wine. This treatment was continued until the eighth day after admission, November 16th, with but little apparent effect on the hemorrhage from the gums; the debility was increasing, and she now complained of tinnitus aurium. A mixture was prescribed for her, containing twelve grains of acetate of lead, a fluid drachm of acetum opii, seven ounces and a half of distilled water, and half an ounce of syrup, of which an ounce was to be taken every second hour. A solution of nitrate of silver, ten grains to the ounce of distilled water, was ordered to be applied freely to the gums; and the wine was increased to eight ounces in the twenty-four hours.

November 17th, ninth day. Bleeding not lessened; the stomach has been constantly sick since the administration of the mixture was commenced. It was omitted, and a draught containing four grains of gallic acid, suspended by means of mucilage in an ounce of water was prescribed, to be taken every second hour; she was allowed the saline mixture in a state of effervescence with lemon-juice, to allay her thirst, which was extreme.

November 18th, tenth day. Bleeding unchecked, and not in the least influenced by the nitrate of silver, which was applied in the solid form to the gums. Some spots of purpura are visible on the chest and arms, and the debility is daily becoming more extreme. On the eleventh day, as the stomach rejected the draughts containing the gallic acid, it was given

in the same doses in the form of pill, and a turpentine enema was administered.

November 20th, twelfth day. Hemorrhage continued constantly. Ruspini's styptic was applied to the gums, and folds of lint wet with it were placed between them and the inside of the cheeks, but without the least effect on the bleeding, which exudes just as freely as on the day of her admission. In the evening she was evidently sinking, and she died in the course of the next day.

After death, the body presented a perfectly bloodless appearance, so much so that there was not the least sanguineous engorgement of the depending parts even twenty-four hours after life had been extinct, when the examination was made. Here and there a few spots of purpura were scattered over the surface. On cutting through the integuments of the thorax and abdomen, the muscles exhibited a bright red colour, and were thickly coated with fat; proving that there was no connexion between this disease and scurvy, which was then prevalent in the city. All the internal organs presented a perfectly healthy aspect, except the left lung and the heart, which were thickly dotted over with spots of purpura. On the heart some of the spots were of the size of a pea, extremely dark in colour, but most of them were florid red, about the size of a pin's head.

This case differs in many respects from most of those that have been recorded, in which a fatal result followed from idiopathic hemorrhage. There was in it no evidence of the existence of a hemorrhagic diathesis until about three weeks before her death; and from details obtained from her friends it appeared that none of her relatives, either by the father or mother's side, had been liable to hemorrhage in any form. From the prevalence of scurvy in this city at the time, it was believed by many who saw the case that it was a form of that disease; but this opinion was contradicted by the manifest difference between the symptoms and those of scorbutic patients then in

the hospital,—as especially marked by the condition of the gums, the absence of blotches of blood on the surface of the body, by the appearances presented after death, and by the fact that the girl had not been exposed to any of the causes by which the epidemic of scurvy was produced.

It must be admitted that we know but little of the causation or pathology of hemorrhage of the character of that which occurred in this last example. It is a rare form, and light can be thrown on it only by the accumulation of cases; with which view, as I have before remarked, I now publish it. The same observation applies to the treatment; but I think it may be concluded, that any remedies, to prove effectual, must be had recourse to in the very commencement of the disease; for it would appear that when once the capillary circulation of the mucous membrane acquires the habit, so to say, of permitting the transudation of the blood, the difficulty of checking the hemorrhage is much increased.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

On the Operation for Strangulated Hernia. By Henry Hancock, F. R. C. S. E., Surgeon, and Lecturer on Surgery, Charing-Cross Hospital, &c., &c. London. 1850. 8vo, pp. 94.

The high position which the subject of hernia deservedly holds in the estimation of all practical surgeons, entitles it to a large share of interest and close consideration. The great present inconveniences of the simplest form of the disease, its prospective dangers, the urgent character of the symptoms evidencing strangulation, the manipulatory particulars to be borne in mind in the operation for its relief, and the host of serious ill consequences accruing from the operation upon the one hand, and from neglect to perform it, on the other,—all stamp this affection with a degree of importance which enforces attention to the subject. The short treatise before us aims at nothing more than offering some observations "on the operation for strangulated hernia;" and the author acknowledges in the commencement that they contain nothing of novelty.

There is evinced at the present day a morbid zeal for every thing that bears the impress of novelty and originality, or, at least, the semblance of them; and while instruction of the most valuable kind is often contemned and disregarded, because founded upon long-established principles, we find every new thought and idea hailed with enthusiastic respect, though they boast of nothing more, in many instances, than a degree of intrinsic ingenuity. Without wishing to cast a slur, the most indirect, upon original or novel views, which, when fully developed, lead so frequently to vast improvements in our science, we would say that this excessive eagerness for what is new, with a contempt for what is old, is too generally the offspring of

misdirected genius, or implies the possession of a mind unsteady in purpose, and not unfrequently devoid of sound information.

Mr. Hancock certainly adheres throughout all his remarks to his introductory admission, that they present no novelty; but they are not from this circumstance the less instructive, and we therefore strongly recommend a perusal of the work, with a confidence that much useful matter will be gleaned from its pages.

The main object of the author is to establish the superiority of the ordinary plan of operating, by which the hernial sac is opened, over that proposed by Petit, and adopted by some eminent surgeons, of dividing the stricture external to the sac; and this he endeavours to do by numerous quotations from the writings of various surgeons, by statistical accounts, and by calling attention to the published results of the two methods. Now we fully concur in condemning Petit's operation, and in inculcating the advantages of opening the sac in all cases; it is the plan we have ourselves followed, and have invariably seen adopted by those whose knowledge and experience we esteem: but, while giving assent to the final conclusions at which our author arrives, we are far from admitting many of the statements which he makes as the premises of the leading argument it is his great object to establish; and we cannot but think that, in his energetic advocacy of the plan of opening the hernial sac, he has evinced a disregard for cutting the peritoneum not warranted by experience or analogy. He says:

"The history of strangulated hernia proves, by every-day experience, that the peritoneum may be cut with impunity. I am willing to admit that, if we cut or irritate healthy peritoneum, we may induce peritonitis, although even this does not always occur; but if we cut inflamed peritoneum, the inflammation does not necessarily increase, especially when that inflammation results from some exciting cause, and by our incision we remove that exciting cause. Our incision, thus, becomes a relief to the patient, whereas, when made in healthy peritoneum, we inflict a violence on the part. I believe, and I am supported in this belief by the observations of Sir C. Bell, that we may cut diseased with greater impunity than healthy peritoneum. The abdominal sections for ovariotomy prove this; the removal of large portions of omentum proves it; the operations for paracentesis abdominis prove it; and the success which attended my case of cæcal disease tends-to prove it. Again: is the general peritoneal cavity laid bare by opening the sac? It must be remembered that the communication between the sac and the abdomen is completely closed by the protruding gut or omentum, and that, even when the intestine is returned, it usually lies so close to the

ring that very little, if any, air can penetrate the abdominal cavity, even if it should be injurious, of which I have great doubt, having had patients who, from wounds, have had the abdominal cavity exposed for a much longer time than would be required for the operation for strangulated hernia, and who have recovered without any urgent symptoms."—p. 6.

Again, in answering Key's objections against opening the sac on the ground of the great depression of the vital powers that results from "the exposure of the bowel," he makes the following remarks:

"Such cases do occur, but that they depend upon causes entirely independent of those here assigned may as certainly be proved; they are equally to be met with in operations where no peritoneal sac or serous membranes could by any possibility be wounded, where no bowel could be exposed. And they are also to be met with in operations for strangulated hernia, where the stricture has been divided external to the sac, which has been left entire. How frequently does it fall to the lot of surgeons to meet with such results, after even comparatively trivial operations; and we may readily imagine such train of symptoms succeeding any operation performed upon a patient, whose powers of life are already almost destroyed by the shock experienced from the prolonged constriction of an organ, so vital and necessary to life as the intestine. If such train of symptoms were confined to operations performed in the usual manner for strangulated hernia, we might be disposed to allow the validity of the argument; but we find the reverse to be the case—that patients die precisely under similar circumstances from other operations, as a reference to Mr. Travers' work on Constitutional Irritation will prove."—p. 12.

And at page 14 he endeavours to account for the sudden depression of the vital powers which sometimes occurs after operation, by an analogical comparison with those cases of ascites and retention of urine in which there is rapid sinking after the withdrawal of the fluid.

"Now what takes place in over-distended bladder, in ascites, or in any case where the powers of resistance or restoration are sapped and undermined, may, equally, take place in strangulated hernia, where the part injured is one of the most vital of the body, where the part is exposed to that injury without intermission, for several hours, nay, for days, where the peculiarity of injuries to such part is extreme prostration, a feeling of sinking and death. We cannot feel surprised, therefore, that any operation, under such circumstances, should be succeeded by collapse, even by death; but surely it is going too far to assert that the only obvious cause for such termination is exposure of the bowel, particularly as we find it equally occurs when strangulated hernia has been treated by Petit's operation, or even when returned by the taxis alone."—p. 14.

Now let us examine the sentiments of the author as expressed in the foregoing extracts. It is true that incisions into inflamed serous membranes are much less serious in their consequences than those made into perfectly healthy structures of the same class; but does the admission of this fact furnish the argument that no harm attends the former procedure? Is not the difference in the danger in both cases one of degree or comparison, and not absolute? Should we scarify inflamed serous membrane upon the same principle as we would inflamed fibrous tissues? Or again, admitting, for argument sake, that we do good, or at least, no harm, by the mere incision, is there no apprehension to be entertained from the entrance of air into the abdominal cavity? To this Mr. Hancock answers: "It" (the intestine) "usually lies so close to the ring that very little, if any air can penetrate the abdominal cavity, even if it should be injurious, of which I have great doubt." In reasoning thus, surely our author forgets altogether the subtle nature of atmospheric air. How is it consistent with possibility to slit up the sac, divide the stricture, return the gut, nay more, pass the finger into the abdomen through the ring,—an expedient which Mr. Hancock himself particularly enforces as necessary,—without some air gaining access? What a contrast is here exhibited between the author's views of the properties of atmospheric air and its effects when admitted into the shut cavities of the body, and the opinions of the philosophers and surgeons of old! Furthermore, should it be allowed that incision of the peritoneum, and the entrance of air into the cavity of the abdomen, are productive of no injurious results when inflammation exists, can the same be said of those cases (comparatively rare, no doubt) in which the operation is performed before inflammation sets in?

It must, we think, be evident to every candid and impartial surgeon of experience, that the objections against opening the sac and cutting the peritoneum are sufficiently cogent to have constituted a basis for those arguments, in consideration of which Petit's operation has been propounded; and in admitting these we do not in the least detract from the superiority of the other method. We uphold the plan of dividing the sac and cutting the stricture from within, not, as Mr. Hancock would lead us to suppose, because it is beneficial to cut inflamed peritoneum, harmless to admit air, and that the fears relative to the "exposure of the bowel" are quite imaginary, but because it is that plan *only* which can afford, in any given case, a certainty of success. Against both operations there are objections, but the leading practical one obtains against Petit's; so that we adopt the other, not as the selection from choice, but as a matter of necessity.

With these qualifications, which we consider it but just to impose, we give our full assent to the following observations:

"In performing operations, it is our duty to select that method which is capable of embracing, as far as may be, all difficulties and modifications which may be met with during such operation, and which it is impossible to ascertain before the operation is commenced; and moreover we ought to employ that mode which holds out the greatest certainty of effecting that for which it is undertaken, and of which, in strangulated hernia, we can never be certain, unless the sac be opened. It is of very great importance that we should be able to judge of the condition of the contents of the hernial sac; whether the intestine be healthy, ulcerated, or gangrenous,—whether adhesions confine it to any part of the sac; the condition and disposition of the omentum, the number of protrusions, the condition and arrangement of the sac, whether double, single, or otherwise, and the seat of the stricture, are all matters influencing the success of the operation."—p. 25.

Mr. Hancock makes some judicious remarks upon the taxis. There is no instance in which the evils of temporizing and procrastination are more conspicuous than in strangulated hernia; how frequently does a few hours' delay in performing the operation make the difference between probable success and an almost certainly fatal result? How frequently, while making fruitless attempts to reduce the contents of the sac, are we losing valuable time, injuring the intestine, and rendering the parts in an unfavourable state for the operation which is to follow? No surgeon would, of course, be justified in rushing to the operation without a previous fair trial of the taxis; but the time he expends in his efforts, and the subsidiary measures he brings to his assistance, should depend altogether upon the period at which he is called to the case. If it be soon after the occurrence of strangulation, we should do every thing in our power to reduce the intestine, making repeated trials; and if the efforts be properly directed, the probability is that success will attend them. But where the strangulation has existed for any considerable time, so that inflammation has occurred, and the intestine has become so much engorged from the continuance of the constriction, that the stricture is probably more than double its original degree of tightness, here prolonged attempts to effect the taxis cannot be expected to prove successful, while it is evident that they add "fuel to the fire."

We were recently called upon to operate in a case of hernia which had been strangulated for nearly five days; the sac and its contents, intestine and omentum, were coated with lymph; the intestine was greatly swollen towards the ring, and a large

quantity of dark brown fluid distended the sac. Now, under such circumstances, to imagine that reduction by the taxis could be accomplished is absurd.

The author lays great stress upon the necessity of administering chloroform previously to the employment of the taxis, and certainly it is in general of the utmost value, but sometimes it produces an untoward effect. In many cases complete relaxation,—that degree requisite for success by the taxis,—gradually comes on and advances, under the influence of chloroform, without the least cerebral congestion apparently, or any preceding convulsive movements. But there are instances, and not a few, in which, though anæsthesia be complete, the patient is thrown into violent automatic movements, the muscles being rigidly contracted, and the face indicating alarming internal congestion; in such we have produced a condition which most of all is disadvantageous to our purpose. It may be argued that this spastic state of the muscles will yield, if the agent be sufficiently pressed; and no doubt it will, but not until complete coma shall have supervened. Whenever chloroform produces these unfavourable results, we should at once discontinue its administration; for if our object be merely the suspension of sensibility to pain, it has, probably, been induced before their occurrence; and if we desire to produce muscular relaxation, we may incur the risk of serious consequences. In the case already alluded to, upon which we lately operated, chloroform was given before trying reduction, and under its influence the muscles, particularly the abdominal, assumed a condition perfectly tetanic, so that we were obliged to relinquish its use.

We coincide with Mr. Hancock in reprobating the system of bleeding largely, with the view of rendering the taxis more likely to succeed, and diminishing the chances of inflammation should the operation be performed. In the case of a strong, plethoric man, in whom a hernia has recently occurred, perhaps during some violent exertion, to draw some blood from the system may be attended with very salutary effects; but the notion, that bleeding can anticipate the occurrence of inflammation, originates in an unscientific idea of the nature of that process, and is opposed to the results of experience. The author deprecates the employment of purgatives after the operation, and is of opinion

"That although the action of the bowels is a satisfactory sign, it is a matter of very little importance whether this action takes place immediately, or in the course of a few days after the operation; the cure will proceed equally well, and we had much better wait until the condition of the patient indicates the propriety of inducing ac-

tion. When all symptoms of inflammation have subsided, this may be safely attempted by enemata, which should be mild, and always be employed, in the first instance, before we exhibit aperients by the mouth."—p. 79.

The exhibition of purgatives soon after the operation, before the intestine has regained its power, is decidedly injurious; but we must not fall into the opposite error of withholding them altogether, and allow the patient to die from ileus.

After citing a few cases, and giving a statistical table showing the relative frequency of the different species of hernia, the influence of age upon the success of the operation, and the results of the several modes of treatment, Mr. Hancock sums up his observations with the following deductions:

"A close examination of the statistics and arguments in favour of not opening the sac in the operation for hernia, tends greatly to diminish its claims for superiority over the more usual proceeding.

"That opening the sac does not increase the danger of the operation, but, on the contrary, is to be preferred as the safer mode of proceeding.

"The majority of fatal cases are not consequent upon the exposure of the inflamed or strangulated portion of bowel, caused by the opening of the sac, as is stated by Key.

"Comparatively few cases die of simple peritonitis after the ordinary operation.

"The amount of mortality is not in the same ratio as the extent of the peritoneum and intestine exposed.

"Incisions made into peritoneum, with a view to relieve an inflamed condition of that membrane, are calculated to diminish, not augment, the inflammation.

"We may incise diseased with greater impunity, than healthy peritoneum.

"Rapid depression of the vital powers with death are not to be attributed to opening the sac. Similar cases are frequently seen, where operations are performed not implicating a serous membrane or a portion of bowel. They are to be met with, likewise, *after* division of the stricture external to the sac.

"The plan of scarifying the neck of the sac is extremely hazardous.

"The risk of wounding the intestine is less in the usual than in Petit's operation.

"The stricture should be divided before any attempts are made to draw the gut from under it; but after the division of the stricture, the gut should always be gently drawn down, and the constricted portion carefully examined, before it is returned into the cavity of the abdomen.

"Bleeding into the abdomen from wounded artery during the ordinary operation is not necessarily fatal.

"The cases of Lawrence, Breschet, Lallemand, and others, prove that the fear of bleeding in these operations is much exaggerated.

"Petit's operation not being applicable to all cases, exposes the patient to the danger attending error of selection.

"The sac should be opened, that we may thereby be enabled to judge of the condition of the intestine—whether healthy, ulcerated, or gangrenons; whether adhesions confine it to any part of the sac; the condition and disposition of the omentum, the number of protrusions, the condition and arrangement of the sac, whether double, single, or otherwise, and the seat of stricture.

"Unless the sac be opened, we are unable to pass a finger into the ring after the reduction of the gut, to ascertain whether adhesions exist in that situation, and which, unattended to, might nullify the success of the operation.

"In Petit's operation, mischief may accrue from returning fetid and decomposed fluid contained in the sac, into the cavity of the abdomen.

"On cutting through the superficial coverings of a hernia, their peculiar odour and appearance do not warrant the conclusion that the gut is in a gangrenous state.

"On the other hand, these signs may be wanting, and yet the intestine be found mortified.

"After performance of Petit's operation, we may have occasion, from the persistence of symptoms of strangulation, to open the sac, and thus two operations are performed; whereas, most frequently, one alone is necessary when accomplished by the usual method.

"The practice of exhibiting purgative medicines before operating for strangulated hernia, with a view to the liberation of the gut by its own movement, is improper.

"The operation has the best chance of a successful issue when undertaken early. The long-continued employment of the taxis diminishes that chance materially.

"The successful cases treated by Petit's operation would have been equally successful under the usual treatment; a very large number of those in which it failed might have been saved, had the sac been opened and the ordinary operation performed.

"If, when the patient is well under the influence of chloroform, the gut will not readily return into the abdomen, we may reasonably infer, that the existing constriction is too great to be overcome by ordinary means, and we ought at once to proceed to the operation.

"The employment of chloroform should supersede the necessity of warm bath, bleeding, and tobacco, in the treatment of strangulated hernia.

"The injurious effects of purgative medicines after the operation for strangulated hernia, are shown by the increased urgency of the symptoms, and the fatal results attendant upon their exhibition.

"Mild enemata are preferable, after the operation, to medicines given by the mouth; but these should only be employed after all symptoms of inflammation have subsided.

"A dose of laudanum should be given immediately after the operation, and repeated as often as occasion may require."—p. 91.

Bericht über die Leistungen in der Pathologie der Harn und männlichen Geschlechtsorgane. Von Dr. Sprengler, in Augsburg(*a*).

Report on the Contributions to the Pathology of the Urinary and Male Sexual Organs. By Dr. Sprengler of Augsburg.

On the Nature and Treatment of Diseases of the Kidney connected with Albuminous Urine. By G. Owen Rees, M.D., F.R.S., 8vo, pp. 134. London, Longman. 1850.

The Pathology of the Kidney in Scarlatina, illustrated by Cases. By James Miller, M. D. 8vo. pp. 177. London, T. and W. Boone. 1850.

Notwithstanding the length of time which has elapsed since the publication of the works reviewed in Dr. Sprengler's Report, we do not hesitate to bring under the notice of our readers some of the very important contributions to urinary pathology made by our continental brethren at the period that Johnson and Simon were conducting their investigations in England. It is to be regretted that the *Jaresbericht der Medicin* of Drs. Canstatt and Eisenman, which we must pronounce to be the most comprehensive and ably conducted publication of the kind that has hitherto emanated from any of the European schools, should be as yet comparatively little known in the British or Irish capitals, although its pages are enriched with the labours of Valentin, of Henle, of Vogel, of Gorup-Besanez, Loebel, and others whose names are illustrious in the annals of German medical literature. The retrospect of Dr. Sprengler is characterized by that patient and extensive research, and perspicuity in arrangement, so generally to be found in the writings of the German school. The contemporaneous publications on the subject of urinary disease which it notices are those of Aldridge, Johnson, and Simon, amongst the Irish and English, and amongst the continental those of Falck, Forget, Finger, and Norden. Of the latter class the observations of Finger, of

(*a*) From Canstatt's *Jaresbericht der Medecin*, for 1847. Erlangen, 1848.

Prague, on albuminous urine accompanying various forms of disease, are especially worthy of attention, as they have been conducted apparently with much care on a very extensive scale, and seem calculated to throw much light on questions connected with the "Law of Morbid Associations."

An examination of the urine was made incidentally in 600 cases, presenting fourteen varieties of pathological lesions, and the presence of albumen was ascertained in a much greater proportion than could have been at all anticipated; while in those instances in which a *post mortem* examination was made, the existence of degeneration of the kidney was by no means so general as to allow of its being assumed as the immediate cause of the abnormal condition of their secretion. In some of the cases, as will be seen, the presence of disease affecting organs in immediate relation with the urinary passages was sufficient to account for the existence of albumen. These results are presented in the following tabular view:

"1.	Of	186	cases	of Tuberculosis, the urine was albuminous in	46
2.	„	88	„	Typhus,	29
3.	„	46	„	Puerperal fever,	32
4.	„	14	„	Carcinoma,	6
5.	„	6	„	Chlorosis,	2
6.	„	18	„	Acute rheumatism,	0
7.	„	10	„	Intermittent fever,	1
8.	„	33	„	Pneumonia,	15
9.	„	14	„	Pleuritis,	2
10.	„	6	„	Peritonitis,	2
11.	„	16	„	Chronic pulmonary catarrh,	3
12.	„	65	„	Intestinal catarrh,	8
13.	„	18	„	Disease of the heart,	7
14.	„	2	„	Epilepsy,	2

"Of the forty-six cases of tuberculosis with albuminous urine, thirty-five died, nearly all exhibiting cavities in the lungs and ulcerations of the intestines, and but two presented the kidneys affected with Bright's disease, although œdema existed in nineteen.

"In the twenty-nine cases of typhus, albumen showed itself in the urine, between the sixteenth and twenty-fifth days of the disease; of these, seventeen died; fifteen with typhoid ulceration of the intestines; in all, the kidneys were sound.

"In the cases of puerperal fever, the urine was altered principally by the lochia, or the secretion of *puerperal ulceration;* in six fatal cases, in which the urine exhibited evidence of the presence of albumen after the cessation of the lochia, purulent peritonitis was observed, but the kidneys were found intact.

"In the six fatal cases from cancer, ulcerated carcinoma was found affecting the uterus in four instances.

"Out of fifteen cases attacked with pneumonia, and presenting

albuminous urine, six died with the kidneys unaffected. In the remaining nine, the albumen gradually disappeared.

"Of eight affected with *catarrhus intestinalis*, three died, in whom ulceration of the mucous membrane of the intestinal canal was found.

In the foregoing cases the albumen was manifestly to be regarded as resulting from the passage of the products of inflammation or suppuration into the urine. When an inflamed or suppurating organ is not surrounded by impermeable walls, its contained fluids, whether lymph or pus, must be carried off from the body by the circulation and the collateral channels."

The observations here recorded must be considered of importance, as they, unquestionably, go far to prove that some other conditions besides special changes in the structure of the secerning organs are competent to produce derangements of secretion. What these conditions may be we have yet to learn; and to the practical physician no little additional source of embarrassment in arriving at an accurate diagnosis is presented, from the fact that the same effect may arise indifferently from any one of many causes. Thus in a case of albuminuria, how essential is it to form a correct opinion as to the cause of the deranged condition of the urinary secretion. Dr. Graves(*a*) has already called attention to this subject; and while his experience corroborates that of Finger, and his observations show that albuminous urine may exist independently of Bright's disease of the kidney, he has also proved that Bright's kidney may be unaccompanied by albuminous urine. The latter, though a possible occurrence, must, we think, be one of extreme rarity; though we have long been of opinion that the presence of albumen in the urine cannot be taken as a pathognomonic sign of lesion of the kidney(*b*). Indeed, in reference to the science of diagnosis generally, it may be stated that, in the present day, a *combination* of signs and symptoms is much more generally valued than the presence of any one phenomenon, however remarkable its characters may be.

The condition of the urine in diseases of an inflammatory type, accompanied by the deposit of lymph in special organs, is a subject of the greatest interest; and it is to be regretted that no observations calculated to throw much light on it have been conducted on an extensive scale. Indeed until the healthy condition of all the excretions, as well as the changes

(*a*) Clinical Medicine, by Neligan, vol. ii. pp. 264, *et seq.*

(*b*) Dr. Montgomery has drawn attention to the occurrence of anasarca of the hands and face in connexion with pregnancy, and has made the important observation, that it is often the forerunner of convulsions during the period of parturition.

produced in them during the continuance of diseased processes, be better studied, a great blank must exist in pathological science, and our knowledge of all the manifestations of any one special lesion can never be considered complete. Of the three great outlets for the elimination of effete products, as well normal as abnormal, namely, the tegumentary, the gastro-pulmonary, and the genito-urinary mucous surfaces, only the last can be said to have at all commanded the attention that it deserves; for, notwithstanding the researches of Liebig, we are in the present day pretty much at the same point of knowledge with regard to indications to be learned from the intestinal secretions as before the modern advances in organic chemistry had been made.

With regard to the connexion of albuminous urine with the existence of abscess, four cases are adduced by Finger, in which he entertains no doubt of the absorption of the matter, and its relation to the appearance of albumen in the urine. From the consideration of all these cases he is induced to believe, "that as in other blood diseases, so in Bright's, the blood is itself first diseased, and that, like other *dyskrasia* which may end fatally, it may lead to the formation of abnormal products [productbildung], namely, to degeneration of the kidney."

Some successful cases of the treatment of albuminuria with nitric acid, in doses of from two to four scruples, recorded by Forget, and a tabular view of seven very complete analyses of the urine made by Falck, in a case of albuminuria successfully treated in the Clinique of Professsor Heusinger of Marburg, conclude the portion of this retrospect devoted to the pathology of the kidney. The remainder is occupied by notices of works on the diseases of the bladder, testes, &c.

Dr. G. Owen Rees, the talented author of the well-known work on the analysis of the blood and urine, has favoured the profession with a small book on the nature and treatment of diseases of the kidney connected with albuminous urine. "The contents of this volume," he says, "may be regarded as a publication, in an extended form, of a few lectures delivered at Guy's Hospital." Notwithstanding the unpretending character of this announcement, we are disposed to regard the present essay as an important addition to the library of all interested in the study of urinary disease, as it presents, in a condensed form, the results of most of the investigations conducted of late by Johnson, Simon, and Gairdner, as well as some of the author's own views on the diseases of the kidney.

The first few pages, treating of the morbid anatomy of the

kidney, present us with Rayer's classification, the subdivisions of which the author adopts, "chiefly," as he says, "because by studying them the reader will become familiar with a great variety of morbid appearances observed in this disease, and so have his mind well prepared to enter upon the divisions of the subject, and the generalizations proposed by later writers; and not because I in any way agree in the propriety of the distinctions proposed by the author." The classifications of Dr. Christison and Rokitansky are also given; and the researches of Bowman, Johnson, Simon, and Gairdner into the microscopic anatomy of the organ, are detailed with briefness and perspicuity. In reference to the question of fatty degeneration, Dr. Rees says:

"I am by no means satisfied of the correctness of the analogy drawn between this fatty degeneration and that occurring in fatty liver, for the reason that, judging from the proportion of fat contained in such kidneys, they most decidedly assimilate rather to organs suffering from scrofulous deposit, than from the true fatty degeneration."

In connexion with this point three analyses of kidneys made by the author are detailed, by which it is shown how little dependence can be placed on examination by the eye alone, for out of two cases considered as fatty degeneration, and compared with the third, a healthy organ, though one was found to contain more fat than natural, yet the other exhibited a deficiency in this respect. While investigating the relation of fat found in the urine to the condition of the kidneys, the author had an opportunity of examining the kidneys in a case where ether detected the presence of fat in the urine during life; they were found indurated and somewhat contracted, infiltrated by a hard white deposit, "a diseased condition not uncommonly observed in persons of a gouty diathesis, of which the patient was the subject."

The conditions under which albumen may be found in the urine without the existence of Bright's disease, are next considered. According to Dr. Rees, albumen may be found in the urine,

"1st. During the last hours of life, it would appear that albumen is to be detected in the urine of persons dying from diseases quite unconnected with lesion of the kidneys.

"2nd. When any cause of obstruction exists to the passage of the blood through the great system of vessels in any part of its course.

"3rd. When blood exists in the urine.

"4th. When pus exists in the urine.

"5th. The presence of semen is sometimes a cause for the existence of albumen in the urine.

"6th. It is necessary to mention here, as part of the history of the subject, that the urine first passed by persons recovering from Asiatic cholera contains albumen."

The observations of Finger on this part of the subject become of great importance, when taken in connexion with the positions laid down by Dr. Rees, and deserve to be considered as an addition to our clinical knowledge of albuminuria.

Dyspepsia has been stated to cause albuminous urine, but this does not accord with our author's experience, as he has never seen albumen in the urine of such patients, nor in that passed after a full meal, or after the use of cheese, milk diet, or pastry, in all which intances the urine becomes clouded by heat, owing to the presence of phosphate of lime. The exhibition of mercury has also been charged with producing an albuminous condition of the urine, but in fifteen cases noted by Dr. Francis the urine was free from deposit on the application of the test by nitric acid. In the employment of this test several sources of error are pointed out, viz., the re-solution of albumen after a first or even second precipitation(*a*), the white deposit of lithates, and the *milky* precipitate in urine containing the resinoid matter of copaiba or cubebs.

Under the head, " Pathology of the Disease," the state of the blood and urine are fully considered. Some of the author's views on this subject merit particular attention, he says:

"The changes in the blood are not, however, confined to an alteration in the proportions of its natural ingredients; for even in early stages of this disease we find urea can be shown, by analysis, to exist in the diseased blood, accompanied by other proximate animal elements natural only to the urine. The most obvious, and probably the most important morbid change produced in the blood, consists, however, in the loss of its albumen."

The serum of the blood has, according to Dr. Rees, been found as low in specific gravity as 1018 or 1015. In the first periods, the proportion of red corpuscles is about the natural standard; and the fibrine, though it has occasionally been found in excess in the early stage, is not necessarily altered in quantity. With the continuing discharge of albumen the red corpuscles diminish in quantity, and the patient becomes anemic; though

(*a*) This arises from the fact that the resulting compound of nitric acid and albumen is soluble unless the acid is in excess; in applying the test, therefore, the nitric acid should be added in quantity equal to the specimen of urine examined.

the quantity of albumen in the urine may become less, and the serum of the blood regain its natural specific gravity, the fibrine is now occasionally in small excess. To explain the puffy and anemic appearance presented by those affected with Bright's disease, the following theory is advanced, based on three propositions, viz.:

"1st. In health the red corpuscle is supplied with nourishment by the chyle.

"2nd. The chyle is of lower specific gravity than the liquor sanguinis in which the corpuscles float.

"3rd. In the early stages of the Morbus Brightii, the specific gravity of the liquor sanguinis is greatly diminished.

"Now, in red blood of every kind, the corpuscles float in a liquor which is of the same density as the fluid contained within them. This is a necessary result of the physical law of endosmosis, because the blood-corpuscle is a membranous vesicle; and if its contained liquor were by chance to become, for a moment, specifically lighter or heavier than the fluid in which the vesicle floated, endosmodic currents would immediately be set in motion through the membrane, and the result of such changes would be the eventual acquirement of a condition of stasis, in which the fluid within and the fluid without the corpuscle would be found of the same specific gravity. Now, the liquor sanguinis in which the corpuscles float is of much higher specific gravity than the chyle; and when, therefore, that fluid comes in contact with the blood-corpuscles, as it enters the venous system, it meets with these vesicles, which contain a fluid of higher specific gravity than itself, and consequently a considerable quantity of this lighter fluid passes through the coats of the vesicle. This change, which appears necessary to the maintenance of the blood corpuscle (inasmuch as it is the manner in which iron enters to assist in the formation of hematosine) cannot occur to its normal extent if the specific gravity of the liquor sanguinis be lessened so as to approach that of the chyle, because in such a case there will be very little ferruginous matter passing into the corpuscle, and scarcely any at all if the liquor sanguinis be so degenerated as to be below the density of chyle. It is thus, then, on the fact of endosmodic change not occurring to its normal extent, that I believe we may fairly attribute the deficiency of red corpuscles in albuminuria, these important bodies not receiving their nutrition to the proper extent."

The analyses of Franz Simon are quoted as being in accordance with the statements advanced here, which in their present complete form are but a development of those originally put forward in the Gulstonian Lectures for 1845, and which were founded on experiments performed by the author in conjunction, as he informs us, with Mr. Samuel Lane. We have thought them worthy of being laid fully before our readers, as we feel

convinced that the study of physiological physics as conducted by Dutrochet, Matteuci, and others, is highly calculated to advance the cause of scientific medicine.

The changes which the urine undergoes are next considered, and we find that Dr. Rees' experience fully corroborates the observations of Graves, as to the fact that albumen may be absent from the urine, even in advanced stages of this disease. The author agrees with other observers, that in the latter stages the albumen may disappear for a period, or be present only in very small quantity, while in the early stages a large proportion, as much as five grains of albumen to the fluid ounce, may be found. From the examination of the urine in cases under his charge in Guy's Hospital, Dr. Rees is induced to believe that lithic acid may be absent altogether, and that when present its proportion is sometimes much diminished; while, on the other hand, he has known the urine to exhibit a crystalline deposit of lithic acid; and even occasionally, when alkaline, the triple phosphate was discovered in excess. Some remarkable instances of deficiency of urea are next alluded to.

The symptoms and diagnosis of this important lesion merit particular attention, and while we have much to learn before we shall be in a position to discriminate between its several forms, many advances have been made towards our knowledge of its clinical characters. The following observations present us with a succinct account of the more prominent features:

"The acute symptoms observed at the commencement of albuminuria, or during its progress, are as follows:—Febrile heat, pain in the head, dry skin, thirst, loss of appetite, urine scanty and albuminous, frequent desire to pass urine, pain in the loins and lower extremities, urine occasionally bloody; nausea is very often felt, and vomiting sometimes occurs. These symptoms may continue for several days without any œdema being observed. It seldom happens, however, that more than six-and-thirty or forty-eight hours pass without dropsical swelling attracting attention. As regards œdema, it is worthy of attention that we may frequently have the eye-lids and face swelled without any such condition of the trunk or extremities. This swelling of the face alone is a peculiarity which often serves as a guide to the true nature of the case, when the other general symptoms characteristic of the disease are but imperfectly developed. If the acute symptoms above described are not engrafted on any old disease of the kidneys, and receive timely and proper treatment, the patient may completely recover; the albumen no longer exists in the urine, and the disease may never return. Every one, at least, who has seen much of albuminuria, must be aware of cases which have occurred in persons from whom the disease has passed away, and who have enjoyed uninterrupted health for years.

Dr. Bright (even at an early date in the history of his discoveries) was well aware of this; and I am particularly anxious to draw attention to the point, inasmuch as there appears to have been some misapprehension on the subject among the profession.

"If, instead of the above-described fortunate result being brought about, the case goes on, and the chronic form of the disease be established, our patient must be regarded as the subject of one of the most severe and fatal maladies with which human nature can be afflicted. Unfortunately, in the great majority of patients who come under our notice, suffering acute symptoms, we find this to be the case, and for the reason that the greater number we meet with are really the subjects of old and insidious disease, upon which the acute symptoms have been engrafted."

In reference to the chronic form the symptoms which characterise the disease are much the same as those observed in the acute:

"They are, however," as the author remarks, "much less severe, and often trouble the patient so little as to be neglected. The patient complains of general uneasiness, dyspeptic symptoms, nausea, and perhaps occasional vomiting; the urine is passed frequently, while the face is pallid, and perhaps slightly œdematous under the eyes."

Cases of debility with tendency to nausea, anemiated aspect combined with puffiness under the eye-lids, and a peculiar swelling of the wrists and fore-arm, which are indurated but not anasarcous, are considered by our author as important indications which should at once call attention to the urinary secretion.

The connexion between anasarca and degeneration of the kidney, as its cause, Dr. Rees looks upon to be even more frequent than is generally supposed. Dr. Christison is of opinion that at least three-fourths of all the cases of anasarca met with are so caused; but even this large proportion is regarded by our author as less than what really exists; while the occurrence of ascites, pleuritic effusions, and diarrhœa, is considered by him as the result of the general tendency to effusion. In reference to the affections of the brain, which form such important complications of this disease, and which have been by many referred to the presence of urea in the blood, the following observations merit attention:

"For my own part," says the author, "I am greatly inclined to believe that we must look to other causes than the poisoning of the brain by urea, for the comatose symptoms and convulsions observed in this disease. It happened to me not long ago to examine the blood of a patient who had his senses about him to the last mo-

ment of his life, and whose blood was more impregnated with urea than that of any case of Bright's disease that ever came under my notice. He eventually sank; and it was found that no kidney existed on one side, and that the large complementary organ had its ureter obstructed by a calculus. Now here was complete suppression, the blood loaded with urea, and no comatose symptoms. I think it right to mention these difficulties in arriving at an opinion, though I cannot assist the inquirer to the truth: before leaving the subject, however, I would suggest that it may, perhaps, be found hereafter that a certain tenuity of the blood must exist in connexion with the presence of urea in that fluid before the conditions above noticed can be brought about."

This is certainly a very important as well as obscure question, and one the solution of which must, we think, be sought for in the department of pathological chemistry, rather than in any other. The result of accumulated observations would seem to show that in some instances the presence of urea in the blood must be considered as the sole cause of the coma, convulsions, and other symptoms referrible to the nervous centres, as no special anatomical change has been observed after death; while, as in the case just cited by Dr. Rees, a large quantity of urea in the circulation appears to have been, in many instances, unproductive of poisonous effects. These discrepancies can be only explained by supposing that the body ordinarily known as urea is capable of existing in very different states, or, what is more probable still, that there exist several ureas, some possessed of poisonous qualities, and others whose action on the nervous centres is inert. The latter view is rendered highly probable by the results arrived at by M. Wurtz, Professeur Agrégé à l'Ecole de Médecine de Paris, who, in following out the theory of MM. Dumas and Laurent on the "substitution of atoms," has placed it beyond doubt that many bodies exist possessing the general properties of ammonia, which yet differ in chemical constitution, and possess distinctive characteristics; and that it is highly probable that many different ureas also exist, has been shown by the same author. The new ammonias(*a*) of M. Wurtz exhibit the remarkable

(*a*) Some interesting observations on the new ammonias were laid before the Dublin Pathological Society, at one of its recent meetings, by Mr. William K. Sullivan, chemist to the Museum of Irish Industry and to the Royal Agricultural Society of Ireland. Mr. Sullivan has observed that in the breaking up of the constituents of the brain during the process of putrefaction, a large quantity of valerianic acid is produced, and at the same time ammonia, but an ammonia in which part of the hydrogen is replaced by a carbo-hydrogen: in this instance valyle, the carbo-hydrogen of valerianic acid, was the one which had been substituted. Mr. Sullivan is further of opinion that such bodies may occur in the animal organism also, and that their ureas (that is,

property of supporting combustion; and it remains to be proved that of the several ureas some may possess poisonous qualities, while others are inert. It is, therefore, in a high degree probable that an accurate series of chemical investigations into the condition of the blood and urine in Bright's disease will yet throw much light on these important questions. If we reject the doctrine of poisoning to account for coma and convulsions in certain cases not presenting any appreciable pathological change, we must fall back on the unsatisfactory explanations of death being caused by "tenuity of the blood, in connexion with the presence of urea," or "a peculiar pathological state of the brain unattended with effusion, and showing no appreciable lesion on *post-mortem* examination," the only theories which, according to Dr. Rees, can be offered for many such cases. Dr. Miller is of opinion that the poison of urea has a particular action on the muscular system. He says:

"Many cases of the acute and chronic malady I have observed to terminate by gradual or sudden failure of the heart's strength, death being brought about solely in this way. Some few have been so rapid in their progress, especially those in which the vascular system has not been relieved by dropsy, as to lead me to suspect that this principle acted as a special poison on the heart itself."

The affections of the heart, liver, and lungs, which accompany this disease, are next considered, but though ably treated, nothing of a novel character has been added by the author. In reference to the pulse, from which, no doubt, many valuable indications may be obtained, we cannot but think that too high a degree of importance has been attached to a peculiar character of pulse, which is described as "hard and wiry, giving at once an impression that the vessel beneath the finger is less elastic than in health." This condition he considers as owing to a roughening of the lining membrane by atheromatous or earthy matter, and if observed in connexion with pallor of countenance, he says, "we shall seldom be far wrong in predicting that the urine will be found albuminous, and the patient the subject of confirmed kidney disease."

A brief section is devoted to the consideration of *the kidney affection following scarlatina*, which the author regards as identical in character with those other affections of the organ which are accompanied by albuminous urine.

Some judicious observations on the treatment of albumi-

combinations having the same relation to these ammonias that ordinary urea has to the ordinary ammonia) will be found of frequent occurrence in abnormal conditions of the blood and urine.

nuria merit attentive perusal; the leading indications, not only for combating the affection generally, but for the successful treatment of its several complications, being pointed out with much perspicuity and judgment.

In the acute form, though we are occasionally justified in having recourse to active depletory measures, Dr. Rees warns us against the mischief which may be done by inducing that watery condition of the blood which it is the very tendency of the disease to produce. If the symptoms be indicative of an acute and first attack, we may proceed with more boldness than in a case where they supervene on old disease. The usual practice of cupping over the loins meets with our author's approval, but he is of opinion that the quantity of blood taken should not be too large, while this measure should be combined in most instances with saline purgatives, the vapour-bath, and antimonials. Should inflammatory complications of the thoracic viscera, or other important organs, be present, the lancet may be had recourse to, but its effect must be carefully watched.

In regard to mercury, Dr. Rees says that he can assert with confidence that there is little to hope from it, as it does not appear to exercise its usual action, cases of the morbus Brightii too often exhibiting a great facility to the occurrence of profuse salivation from small doses. Even in the inflammatory complications, the author prefers antimony, in increasing doses, to mercury. The diuretic action of digitalis may be of service in cases of anasarca or ascites, in the proportion of from five to ten minims of the tincture to twenty or thirty minims of antimonial wine and two drachms or half an ounce of the water of the acetate of ammonia, a combination proposed by the author. Opium, in doses of from half a grain to a grain, combined with antimony or ipecacuanha, he also considers advantageous, when inflammatory symptoms run high ; but whenever we find antimony answer the desired end, it appears to deserve the preference.

In the chronic form he thinks much advantage may be derived from the use of iron, the best form being the compound iron mixture. Should the stomach, however, not bear this, we may try some of the more palatable preparations, as, for instance, the wine of iron, or the ammonio-citrate or ammonio-tartrate of iron, which may be exhibited in the infusion of calumba. Elaterium is also spoken of highly, especially as an adjunct to the iron. The hot air bath is also recommended, an expeditious plan of applying which deserves notice. A tube, which serves as the chimney to a spirit lamp, is introduced

under the bed-clothes, and the supply of hot and dry air soon causes a profuse perspiration. This is a method which we have been in the habit of using for many years, and we can speak most strongly of its efficacy.

In chronic cases Dr. Rees considers the great indications to be, "first, the relieving the blood of its superfluous water; and, secondly, supplying it with iron, to assist in the production of red corpuscles." Counter-irritation, in the form of seton or issue, is also strongly recommended, which the author says he has known, when worn in the loins, for months, and even years, to have kept the disease at bay.

When the distension of the areolar tissue from anasarca is such as to become painful, puncturing the skin has been practised with benefit. The ingenious method of Dr. Babington is cited by the author: "It consists in introducing the lancet several times by the same opening made through the skin, and each time varying the direction of the point. In this way we succeed in opening a large number of cells, while we wound the skin in one place only." The apoplexy which is generally, as the author says, of the serous character, he considers to be best relieved by purging, derivative enemata, and counter-irritation at the back of the neck.

An appendix is added to the work, comprising extracts from the author's Gulstonian lectures for 1845. We earnestly recommend them to all interested in the scientific investigation of this important lesion, as they contain much valuable information on the physical characters of the blood, the influence on it of the laws of endosmosis, and its relation to the several changes occurring in the disease. From a consideration of the changes effected in the blood-corpuscle by the processes of endosmosis and exosmosis, the author considers it as fully established that this minute body possesses a vesicular structure, that the vesicle or membrane is white, enclosing between its inner surface and the surface of the nucleus, a fluid of a red colour, namely, the hematosine, whose existence in human blood-corpuscles (a point much disputed by physiologists) he also thinks has been fully proven. The error into which the majority of chemists has fallen in respect to these corpuscles is forcibly dwelt on, as it is shown that in most instances they were regarded as consisting entirely of hematosine, whereas they are really organized structures; hence the necessity of obtaining the red-coloured fluid free from its albuminous envelope before we proceed to estimate the quantity of hematosine.

An expedient of great ingenuity has been adopted by the author for this purpose, which consists in first obtaining the

corpuscles free from serum, by receiving the blood into a solution of salt and water or sugar and water (of the specific gravity of the liquor sanguinis), and when the corpuscles have subsided in this solution, and the supernatant fluid has been poured off, they are to be placed in a vessel of distilled water, by the rapid endosmosis of which their envelopes become broken, their nuclei liberated, and the colouring matter dissolved. From this mixture, when set aside, a white stratum of broken envelopes and nuclei subsides, leaving the supernatant fluid of a bright red colour, and containing, in the opinion of the author, every portion of the iron, none of which he believes to reside in the envelope or nucleus. Several other interesting observations, which well merit the consideration of scientific pathologists, will be found in this appendix.

The author's process for the estimation of urea in the animal fluids, which is next detailed, has the merit of avoiding many sources of error, the greatest of which he considers to arise from the relation of urea to ozmazome, as regards solubility in different menstrua. He says there is every reason to think that, when nitrate of urea crystallizes from extractive matter, its weight is much increased by the adherence of ozmazome, and he proposes an excellent method for the separation of these substances. The concluding pages of this little book are occupied with the question of albuminous urine in connexion with pregnancy. We believe attention was first directed to this important subject by the observations of Professor Montgomery(*a*) on the occurrence of anasarca of the hands and face during the period of gestation, and its being often the forerunner of convulsions during parturition. In the opinion of Dr. Rees, it is to the late Mr. Tweedie, of Guy's Hospital, that we are indebted for the knowledge of the fact that the urine is often albuminous during utero-gestation; while the researches of Dr. Lever have further elucidated the subject. From the combined observations of several writers, it would appear that women, who are the subjects of puerperal convulsions, always pass albuminous urine; and this, Dr. Rees is of opinion, may occur without renal degeneration. The researches of M. Blot(*b*) lead to the conclusion that albuminuria must be considered as a sign which should make us apprehensive of convulsions during parturition, though they do not necessarily occur in all cases in which this abnormal condition of the urine exists.

While Dr. Rees has given but a very brief section to the consideration of the kidney affection of scarlatina, we find that

(*a*) Exposition of the Signs and Symptoms of Pregnancy, p. 5.
(*b*) See *Gazette Médicale de Paris*, No. 9, 2 Mars, 1850.

the work of Dr. Miller is almost exclusively devoted to this special department of the subject, comprising, as it does, the result of his observations on the epidemic of 1848, for the study of which he appears to have enjoyed ample opportunities in his capacity of physician to the Western General Dispensary. The subject matter of Dr. Miller's work was first submitted to the profession, as he informs us, in a short paper read before the Medico-Chirurgical Society of London, and subsequently published in the Lancet, in February, 1849. After some general considerations on dropsy, the author proceeds to enumerate the symptoms which he considers most characteristic of "scarlatinal congestion of the kidney." "The main feature," he says, "of the acute general dropsy of scarlet fever, is the sudden occurrence of *anemia*, a circumstance owing to the arrest of the depurating function of the kidneys, and certain important changes induced in the physical and chemical qualities of the blood. Superadded to dropsy, it imparts the well-known condition *leuco-phlegmasia*."

Again:

"These anemia and anasarca are ushered in by fever of an inflammatory type, of greater or less intensity. After a very obvious *malaise*, of no definite duration, sometimes dating from the disappearance of a scarlatina rash, a rigor occurs, often attended with cephalalgia and vomiting. The rigor, amounting in many cases to a mere chilliness, is more rarely exalted into a paroxysm of general convulsions, especially in young children. The functions of the sensorium may be much disturbed from the first accession of the fever, and active delirium, dilated pupils, with partial or complete insensibility, may take the lead. The pulse, under these circumstances, is often very slow; but on the occurrence of reaction without head symptoms, it is frequent and hard; the breathing is accelerated; the heart's movements are tumultuous. We are generally led, from the first, to auscult the chest, and not unfrequently surprised to find the physical signs of thoracic inflammation absent. The first stage of pneumonia, a roughness with the first sound of the heart, or signs of inflammation of one or more of the serous cavities of the chest, may, however, at this period, be detected. The abdomen, generally complained of, is now tender on pressure; the patient is intolerant of manipulation about the loins, hypogastria, and umbilicus, and often has peritonitis been suspected where the kidney was solely the seat of disorder. Simultaneously is the urine frequently suppressed or very scanty, the patient passing for many hours only a few bloody drops. I have observed not more than an ounce passed for three days in succession. Under these circumstances even, the fluid is rarely above the normal density, and varies much in its degree of coagulability. In rare instances the albumen is ab-

sent from the urine from first to last, or only discoverable towards the close of the disorder, when the patient is considered convalescent."

This forms a tolerably perfect *resumé* of the most important general symptoms, which deserve the very highest consideration, as, in our attempts to combat so very formidable a disease, the earliest indications are ever the most valuable. In reference to *albuminuria*, usually considered essential to confirm the diagnosis of this affection, Dr. Miller would seem to think that in certain cases this symptom may be absent from "first to last," and that the combination of anemia and dropsy, with the other general symptoms just enumerated, may be considered to a certain extent significant of renal disturbance, though at page 10 we find it stated that—

"Almost coetaneous with the general dropsy, the urine is found coagulable, and the slightest febrile movement during suspected convalescence from a scarlatina-rash, at any period of the desquamation process is a signal to institute an examination of this secretion."

In combating Dr. Graves' views as to the nature of the dropsy occurring after scarlatina, our author appears to have fallen into error on two points, as he states that Dr. Graves considers the kidney unaffected in scarlatinal dropsy, an induction which cannot be fairly made from any observations in the "Clinical Medicine." The following passage exhibits Dr. Graves' views on this subject:—"The boy's urine was remarkably albuminous, and of the specific gravity of 1027. This is a point worthy of remark. In many cases of dropsy after scarlatina, the urine is albuminous. Now, almost every case of this kind will get well, and as convalescence progresses the urine ceases to be albuminous. These facts, of the truth of which I can speak with confidence, are quite sufficient to show that those persons are wrong who assert that albuminous urine is always the result of organic disease of the kidneys." After some further observations, Dr. Graves goes on to say:—"This case went on unfavourably, the boy died, and the kidneys were found in every respect healthy"(*a*). This fact alone would be sufficient to show the fallacy of Dr. Miller's opinion, when he says:

"I am inclined to differ *in toto* from this eminent writer, believing that true albuminuria is invariably significant of an acute or chronic lesion of the kidney, obstructing the general circulation, and impairing at the same time its elementary function."

(*a*) Clinical Medicine, by Neligan, vol. i. p. 350.

But the observations of Finger and others, already quoted, have placed it beyond doubt that albumen may exist in the urine independently of lesion of the kidney. As to the period of the disease at which dropsy usually occurs in cases of scarlatina, and as to whether it deserves to be ranked amongst the primary or the secondary affections, some of Dr. Miller's investigations are very valuable. He says: "Many of the facts contained in the cases given in the sequel tend to show that it does result from a primary or direct action of the poison of scarlatina upon the kidney itself; while others further indicate the necessity of considering it as occasionally constituting a distinct form of scarlatina." The enunciation of this important proposition is followed by some general deductions from the writings of Williams and Gregory, while the author's own immediate proofs are, by a singular want of judgment in the mechanical arrangements of the book, transferred to the third chapter, whither we are obliged to follow him, passing over the intervening second chapter, which is devoted to the "Anatomical Appearances," and which, beyond some observations on secondary inflammations arising from urea existing in the blood, and the absence of rigor mortis, contains little of interest.

The third chapter, comprising "Pathology and general Conclusions," presents us with a summary of the author's cases, from which it appears that—

"Out of 219 cases of scarlatina, 119 were examples of *scarlatina simplex*, one of which died during an attack of pneumonia supervening to the eruptive period, none having presented any manifest renal symptom; 21 were cases of anginose scarlatina, of which 11 died; the latter were chiefly infants; 10 were cases of true *scarlatina maligna*, of which number 9 died; and of the 69 dropsical cases 8 died. Of 72 cases out of 6 given as illustrative of the renal symptoms, 6 occurred in a sub-acute form, between the termination of the first month, dating from the decline of the eruption, and the sixth week; 16 during the third week, of which 12 commenced on the fourteenth day, and 4 on or about the twelfth day; of 10 cases occurring in the first week, 5 had their commencement on the seventh day; and in 3 the symptoms of renal disturbance were unequivocally shown during the period of eruptive and scarlatinal angina."

It will be seen that more than half of these cases (119 out of 219) presented no manifest renal symptoms; yet the author proceeds to make deductions from the writings and definitions of Cullen, Plenciz, and Williams, by which he endeavours to prove the essentiality of the dropsical affection to scarlatina; a view which we cannot but consider as untenable, at the same time that we fully recognise the importance and frequency of

the renal complication, which we look upon as bearing the same relation to scarlet fever as the secondary inflammations of other organs, so often observed in the same disease. While the experience of Dr. Williams induces him to fix the twenty-second or twenty-third day as that on which the dropsical symptoms most usually supervene, it will be observed that, in the cases recorded by our author, renal symptoms were manifested as early as the fourteenth day by twelve; and in five these symptoms presented themselves on the seventh day, while three showed evidence of renal disturbance during the very period of eruption.

The term *renal scarlatina*, or *scarlatina of the kidneys*, is applied by Dr. Miller to that class of cases in which, after prolonged exposure to the poison of the disease, the *first* specific actions of scarlatina are not manifested; at least eight such cases will be found amongst those recorded by the author in which the eruption was absent, but which presented albuminuria and anasarca at variable periods after exposure to contagion.

A remarkable example of this form of the disease is given by Dr. Graves, which he says "appears to prove the fact, that in some instances diseases produced by contagion do not give rise to the whole train of phenomena by which they are ordinarily characterized"(*a*), an explanation which we must confess seems to us more satisfactory than that of Dr. Miller, who, dissatisfied with the term "latent scarlatina," used by authors to designate this form of the disease, would lead us to imagine that a special scarlatina of the kidneys exists. Our general complex idea of disease resulting from the combinations of many single phenomena, we are not warranted in concluding from the absence of one, two, or even more, that we have to deal with a separate and distinct affection. To the general proposition of the author, "that the skin, throat, and kidneys are the proper recipients of the poison of scarlatina, the symptoms of affection of each being only prominently marked in those cases, with the exception of the skin, in which the poison acts with a certain degree of intensity," we give a ready assent, indeed we feel much pleasure in recommending the entire of this chapter to the reader, as one which contains much valuable matter, though highly imbued with the peculiar tenets of the writer. It is concluded with some brief and interesting remarks on the history of the several great epidemics which have been illustrated by the pens of such master-minds as Sydenham, Morton, Fothergill, Plenciz, and Hamilton, from which it is seen, that while in the writings of Sydenham scarlatina is described as no other than a skin affec-

(*a*) *Op. cit.*, vol. i. p. 347.

tion, the disease is delineated at an earlier period by Morton, much as it occurs at the present day.

The fourth and last chapter presents us with the author's views on the treatment of this important affection, but beyond a consideration of the general indications, and the careful use of blood-letting, warm baths, purgatives, diaphoretics, and diuretics, nothing of any great novelty or interest is put forward.

The details of seventy-five cases, presenting many features of great importance, conclude the work. The records will be found in many instances copious, and for the manner of inserting and printing them, the author informs us he has followed the example shown by Dr. Christison in his work on Granular Degeneration of the Kidneys.

The amount of attention bestowed on this important department of pathology in the different European schools of late years, as evidenced by the number and rapid succession of works on the subject, promises at no distant period to place it amongst the most highly cultivated and best illustrated of all the branches of practical medicine. The union of the hands of many labourers in the field of science makes light the most comprehensive works; and, from the combined observations of the chemist, the histologist, and the clinical physician, singularly rapid advances are being made in the pathology of urinary disease. To the clinical observers of the Irish School of Medicine we would earnestly recommend this interesting and important department; few others can be found in which their names are not ranked with those of the most original and industrious contributors.

Sketches of the Medical Topography, and Native Diseases of the Gulf of Guinea, Western Africa. By WILLIAM F. DANIELL, M. D., Assistant Surgeon to the Forces. London, Highley. 1849. 8vo. pp. 200.

AN investigation into the causation of disease, particularly in climates remarkable for their insalubrity, is a subject of vast importance, and of great interest to the medical inquirer. Although capable of living in every portion of the globe, there are yet certain regions the lethal influence of which the white man has hitherto been unable to overcome or to prevent. Of no part of the world is this more true than of the western coast of Africa; known to Europeans for nearly 300 years as a settlement, yet how slightly has the mortality there decreased, to how small an extent has the number of victims diminished,

which, year after year, fall a prey to the deadly influence of that portion of the earth, but too truly named the "White Man's Grave"! In the present day this inquiry is one of special interest; the slave trade is now so far abolished that commercial enterprise is daily more and more directed to the obtaining of those products which are yielded by the almost unexplored and unknown regions of this coast. Dr. Daniell's work can be scarcely termed a purely medical publication, yet it affords us most valuable information, in an attractive form, on the topography, climate, habits, and diseases of the natives, with cursory observations on the affections to which white settlers are liable; indeed, he himself puts it forth as preparatory to a future work on the pathology of the febrile affections of tropical Africa. In his introductory observations he refers to the papers on the fevers of Gambia and Sierra Leone, published by Mr. Boyle and Dr. Burton, and to the Medical Reports of the Niger Expedition; but he does not seem to be acquainted with the valuable essay of Dr. Kehoe, published in the sixth volume of our new series, and in which that physician puts forth views, as regards the use of remedies directed to the surface of the body, remarkably coincident with his own.

The present volume is confined to a description of the equatorial region of the Gulf of Guinea, the especial slave district. He divides it into four parts, the two first of which are devoted to those regions bordering on the Bights, or Bays, of Benin and Biafra, and the two latter to the larger islands of the group scattered over the southern seas of this region. The Bight of Benin is the commencement of the Slave Coast. It is, in nearly its entire extent, 360 miles, an almost interminable forest swamp, traversed by small rivers and crecks. The sea-coast, covered with decaying vegetable matter, continually exhales a peculiar offensive odour, perceptible at sea at a distance of even several miles, and the very sea water is impregnated with its noisome gas; consequently the sailors in vessels lying off the shore are frequently affected with diseases similar to those which attack the white settlers on land. The author first gives an interesting geographical description of the towns and river settlements on this coast, together with an account of the vegetable productions of it; and having given a short history of the inhabitants, as far as he was able to obtain authentic facts, proceeds to speak of some of the singular customs, evidently dependent on religious tradition, which are still prevalent amongst them. Of these, the most singular are the general customs of circumcision in the male, and of excision in the female.

"The excisive process," writes Dr. Daniell, "is not restricted to one particular part, but is more or less varied in conformity with the usages of the different countries in which it is promoted. Under these modifications it may be classed under four heads, viz.—1, simple excision of the clitoris; 2, excision of the nymphæ; 3, excision of both nymphæ and clitoris; 4, excision of a portion of the labia pudendi, with either or all of the preceding structures."—p. 27.

"The first, and least objectionable of these operations, is the one almost universally selected by those nations where such curious customs are permitted. It is, fortunately, not accompanied by any dangerous symptoms, a moderate febrile irritation, with painful tenderness and profuse suppuration, being the common termination. Whenever a lack of skill or manual dexterity prevails on the part of the operator, it assumes a more serious aspect, violent inflammation and sloughing of the circumjacent textures frequently supervening. This process is mostly carried into effect before puberty, but the age of the person is no obstacle to its completion, should such be thought necessary. In Ebo, Old Callebar, and other parts of Western Africa, it occurs between the years of four and nine; much, however, will depend in these cases on the locality, and the purpose for which it is intended. When in Callebar river, I had an opportunity of witnessing the mode of operation undertaken there, as elsewhere, by aged females. The girl having been placed on the knees of a woman, with the legs apart, the clitoris was diligently sought out (for in this, as in other subjects of tender age, from imperfect development, it was sometimes difficult of detection), and upon discovery was seized, forceps-like, by two pieces of bamboo, or palm sticks, gently drawn forth, and severed by means of a sharp razor. The hemorrhage was rather copious, but it was suffered to exhaust itself. Afterwards the parts were alternately bathed with warm and cold water, and the girl placed in the recumbent position. The surface of the body was then dotted over by some fetish preparation, to avoid the molestations of any malign influence, and in two or three days the little invalied was restored to her usual occupations. The clitoris here is termed Yientra, and its continuance in females approaching maturity is not unfrequently deemed a cause of reproach. This peculiar observance is popular in various parts of Arabia, Darfour, Kordofan, and among the Galla tribes of Abyssinia; also in several of the kingdoms of Soudan, in the Foulah and Mandingo countries, and in the Ebo's of the Quorra, and the populations of those rivers connected with them.

"The second division, or removal of the nymphæ alone, is rarely attempted on the same grounds as the previous operation: it is resorted to more as a surgical measure in those morbid states where the structure is the seat of hypertrophy or fungoid enlargement, and to which negro females are liable, either from exces-

sive indulgence in venery, or from constitutional predisposition."—pp. 29–31.

"The excision of these organs in conjunction with the clitoris, though rather less common, is maintained in many of the countries where similar ordinances are instituted and upheld. In general it is effected at the desire of the woman herself, either in complaisance to the hereditary customs of the family to which she belongs, or to the arbitrary caprices of her superiors, and as a means of ingratiation into the favour of her liege master, who may allude to its consummation as a proof of her devotion to his wishes; not that this latter event is dependent on her option, for in the African code of domestic regulations it is freely understood that the hints of a husband are tantamount to law. Social life, in most of the Pagan towns of Western Africa, is darkened by scenes of the grossest demoralization, and its annals teem with pictures of such a licentious and depraved character, that a narrative of them would scarcely command credibility. An illicit and promiscuous sexual intercourse is constantly carried on by nearly all classes of slave subjects, who, not fettered by any moral obligations, and solely intent on the gratification of their passions, give them an unrestrained rein long before the age of puberty. In the younger branches of families more immediately under the supervision of their chiefs, any dereliction from an established probation of chastity in these respects is punished with fearful severity, both in boys and girls, especially if any of the latter is a favourite domestic or near relative, since the license is only justifiably allowed in individuals who have attained a proper maturity. The evil effects of this immorality, however, are sensibly felt by those persons who are accustomed to procure and retail them (i. e. the female slaves), in the light of a commodity for traffic. Slave merchants of the interior, when they, therefore, visit the marts for the selection of young females, are amply aware of the laxity of frame and physical deterioration that ensue from the premature development of form in these cases; and, by a careful series of manipulations over various portions of the body, determine how far they may venture on the price, should the vender not guarantee their virginity. In spite of the most stringent precautions, a clandestine intercourse is more or less prevalent among the sexes, from the opportune temptations afforded them; therefore, for the prevention of these delinquencies, the cruel and painful process (the concluding division) is had recourse to.

"Dr. Brown, who resided some time in Darfour, North Africa, has given the first account of this operation. He remarks that the clitoris is cut off at the age of eight or nine years, and the term employed for denoting the performance is خفض *Chafadh*, while the appellation conferred on the person who operates is that of خفضة *Chafadhah*. The object of the first excision is for the purpose of 'producing an artificial impediment in the vagina, to prevent sex-

ual intercourse, in order not to impair the value of the slaves. This operation, like the former, is performed at all ages, from eight to sixteen, but commonly from eleven to twelve. * * * The operation was performed by a woman, and some of them complained much of the pain both at and after it: they were prevented from locomotion, but permitted to eat meat. The parts were washed every twelve hours with warm water, which profuse perspiration rendered necessary. At the end of eight days, the greater part (of those operated upon) were in a condition to walk; and, liberated from their confinement, three or four of them remained under restraint till the thirteenth day.' Dr. Brown, however, does not appear to have thoroughly understood the details of this operation, inasmuch as they are two distinct operations, performed in many countries at different intervals, and the solitary excision of the clitoris is no obstacle to copulation, unless some of the adjoining textures have been removed with it."—pp. 32–34.

"In some of the countries of Western Africa, another and more inhuman barbarity is perpetrated on girls of high birth, who have been guilty of prostitution, and is often succeeded either by a partial agglutination of the vaginal membranes, or a permanent obliteration of the canal. It consists in the introduction into the vagina of unripe pods of the *capsicum fructescens*, or bird-pepper, beaten into a soft mass, so that from its acrid principle a greater amount of suffering may be inflicted, in order to deter the fair debauchee from committing any further excesses. The pain from the active inflammation thus induced is of the most severe character. I was informed by one of the principal inhabitants of the comparatively civilized town of Clarence, Fernando Po, that this course of punishment is now and then had recourse to, to check any similar irregularities on the part of the female.

"During my stay in those Pagan towns where female circumcision is supported, I have frequently attempted to procure information of its early origin, but without success; the invariable answer to my queries was, that it had been transmitted to them from their forefathers, and further than this they know not. Some chiefs, indeed, have told me that it was intended to do away with those criminal liaisons which are apt to occur where a number of females are congregated under the roof of one man. I am, however, very sceptical as to the truth of this explanation, although it may be admitted as one of the causes of its present toleration."—p. 35.

The diseases to which the inhabitants of this portion of the coast are subject differ but little from those of the other regions afterwards described. In low situations, as in the maritime towns and villages, they usually assume a more asthenic type than in the prædial and elevated inland districts. Cutaneous diseases in various forms are very common, as lepra, psoriasis, scabies, frambœsia, &c.; but syphilis seems to be the most frequent and fatal of all the diseases to which the male population

is liable, predominating among them more than among the females. Dr. Daniell states that cases of gonorrhœa, foul and malignant phagedenic ulcers, nodes, and other sequelæ of syphilis, not unfrequently resist the most energetic and judicious treatment of the European surgeon. Small-pox occurs occasionally after long periods, generally of a peculiar malignant type, and invariably sweeping off two-thirds of the inhabitants of those villages exposed to its visitations. Pleuritis, pneumonia, consumption, and other diseases of the lungs, are frequent during the cold rainy months, during which period also dysentery, diarrhœa, and other disorders of the abdominal viscera, are common. Intestinal worms, of which the tape-worm and ascarides are the most general, are productive of much suffering among the women and inferior class of slaves; but the author states that of late years the introduction and plentiful supply of European salt has somewhat diminished their occurrence. Cerebral diseases and maniacal affections are uncommon.

These are the principal maladies, if we except chronic ulcers of the leg, and occasional elephantiasis, to which the natives of the Rio Formosa and Slave Coast are subject. If we contrast with them the diseases which cause such a sacrifice of life amongst the white traders in this portion of Western Africa, we cannot but be at once struck with the truth of the observation of Dr. Graves, "that a proper attention to the physical and mental qualities of the varieties of the human race would soon make known what region of the earth each is peculiarly fitted to inhabit"(*a*). For the mortality amongst the whites seems to be altogether due to "a class of insidious febrile diseases, particularly the remittent fevers, whose adynamic type, rapid career, and other pathological features, differing so greatly from those of other tropical climes, sufficiently stamp it with that odious celebrity now vividly diffused and too justly merited." When Dr. Daniell visited the Rio Formosa in 1839, he found two vessels moored a short distance from its mouth, one of which, within the space of five months, had buried two entire crews, a solitary person alone surviving; and the other, which had entered at a much later period, had lost one-half its men, while the remainder were incapable of undertaking any active or laborious duty. The ship to which he was himself attached became so unhealthy, that after some weeks they lost one-third, out of a compliment of eighteen men. In truth, the old slave doggrel rhyme is yet but too true:

> "Beware and take care of the Bight of Benin,
> For if one comes out, twenty stay in."

(*a*) Clinical Lectures, by Neligan, vol. i. p. 366.

The Bight of Biafra next engages our author's attention. Into this sea, formerly known as the Ethiopic Gulf, the classical river Niger, the Quorra of modern geographers, empties itself by its many mouths, which form a vast delta of swampy mud. Along the banks of this river, and its tributaries, and the sea-coast generally, the most prevalent diseases are those of the cutaneous tissues, which, together with derangements of the abdominal viscera, constitute the greater proportion of the endemic affections. Higher up in the country ophthalmia and cataract are exceedingly common, Mr. Oldfield having met, at Rabbah, several hundred cases of double cataract; while cutaneous diseases are very rare, owing to the prevalence of Mohammedanism, the natives performing their ablutions twice daily. To Europeans this river does not seem to be so unhealthy as the Rio Formosa, nevertheless its emanations are eminently deleterious to the unacclimated, the mortality among the crews of the shipping averaging at least from twenty-five to fifty per cent. In describing the diseases peculiar to the inhabitants of Bonny and New Callebar, which are similar to those of other portions of the Bight, Dr. Daniell gives an account of the native process of cupping, which is chiefly used in congestion of the vessels of the brain or its membranes, accompanied by much fever and excitement. It consists in making three parallel longitudinal or horizontal incisions on either temple, from ten lines to an inch in length, and about eight lines apart. These incisions are performed by a sharp razor or a knife, and a small calabash is then applied, the air being exhausted by burning paper or cotton. Over other parts of the body, instead of cupping, the natives are in the habit of making deep scarifications, and then assiduously bathing with hot fomentations, to promote the free oozing of the blood. Hernia, both congenital and acquired, is occasionally seen in this district, particularly amongst the slaves. The natives look upon umbilical hernia as ornamental, and with this idea allow the intestines to protrude to a considerable extent. The females are not prolific, rarely giving birth to two or three children, if so many.

"Should, however, any woman at her accouchement be unfortunately delivered of twins, both the mother and her offspring are condemned to immediate destruction, inasmuch as the affair is viewed in the light of a public degradation, the Jujumen asserting that, under such circumstanees, it places the woman upon a disgraceful equality with the brute creation. The wife, provided she is a favourite, not unfrequently escapes with life, but the children are never suffered to exist. This barbarous custom is also adopted

by the Ebos of the Quorra and Andony, and by the people of Guiana, in South America. It is likewise upheld in some of the towns of Benin, according to the statements of Bosman, who relates that 'in all parts of the Benin territories twin births are esteemed good omens, except at Arebo (Reggio), where they are of the contrary opinion, and treat the twin-bearing women very barbarously, for they actually kill both women and children, and sacrifice them to a certain devil.' Parturition in the negro female has been generally represented to be an easy process, and not attended with much danger; such, however, is not invariably the case. Inquiries among the different tribes have amply satisfied me, that in many instances the parturient woman has perished from want of a little timely assistance in those complex and preternatural labours which have hitherto been supposed to be of less frequency among them than in the females of more civilized communities. Puberty in these regions commences about the age of eleven or twelve years, and sometimes much earlier.

"Women, during the continuance of the catamenia, are deemed unclean, and are not permitted to touch or go near any object in use. Most of them, when in this state, retire from public life, and are usually immured in a solitary apartment, until the cessation of the discharge, and the subsequent purification, allows of their liberation; all sexual intercourse in the interim being firmly prohibited. In the interior it is a well-known fashion for the females to paint themselves in glaring colours, in order to denote the existence of this periodical secretion, and at the same time to warn strangers from being in any degree contaminated by their propinquity. It is well worthy of remark, that several of these ordinances are precisely in accordance with those Mosaic laws laid down in the book of Leviticus, which strictly enjoin many wise and salutary precautions relative to this subject. Females of all ranks are accustomed to besmear different parts of the skin with the powder of a species of redwood tree, triturated with palm oil. This pigment has been thought to correct the fetor of the perspiration, and also to enjoy certain prophylactic influences. Not a few, however, adorn themselves with it, to heighten the effect of their charms. In Katunga, Rabbah, Boussa, and other towns in central Africa, it is also used for similar purposes. Clapperton says, that it is brought from Benin, 'pounded into a powder, and made into a paste; women and children are rubbed with this, mixed with a little grease, every morning; and very frequently a woman is to be seen with a large score of it on her face, arms, or some part of the body, as a cure for some imaginary pain or other.' Circumcision is performed on both male and female; the consummation of this rite, however, in the latter sex, is not of such general prevalency as in Ebo and Old Callebar."—pp. 97–100.

As regards the white crews of the ships which frequent the Rio Bonny, the deaths seldom exceed twenty-five per cent.;

and in a healthy season, out of a large compliment of men, they do not lose a single hand. This, we think, must to a great extent depend on the custom which the author describes as being adopted by all vessels which enter these rivers for any length of time, that of being housed over with mats made from a species of palm, which, although not waterproof, serves as a temporary protection from the rays of a fervid sun and the inclemencies of the weather.

In Old Callebar the diseases of the natives seem to be almost precisely similar to whose which occur in the localities now described, but they differ in their type, which is generally of a more sthenic and inflammatory character. Dr. Daniell states that he met with one or two cases of puerperal mania, at Creek Town, on this river; a rare event, since persons of any rank, if suffering from maniacal disorders, are not permitted to reside in the towns, and are carefully avoided, from a singular idea which the natives have, that their saliva, if thrown upon others of sane mind, has the effect of rendering them similarly affected. This river, in the sickly season, is exceedingly unhealthy to the white seamen, the mortality of the crews of ships frequenting it amounting often to more than fifty per cent.

A matter of much interest in the present day, and one which may ere long become an important commercial speculation, is here noticed by Dr. Daniell. The medicinal leech is, it is feared, becoming gradually extinct in those places from whence our present supply is derived, and various suggestions have been lately thrown out with a view of providing a substitute for what must be regarded as one of our most valuable therapeutical agents. The French have recently invented a mechanical leech; it is constructed with great ingenuity, but yet is nothing more than a cupping-glass on a small scale, and, therefore, is totally inapplicable for the direct withdrawal of blood from inflamed surfaces. In this volume the author mentions that the *Hirudo medicinalis* is found in the fresh-water swamps in the upper course of the various rivers of the Bight of Biafra; it is, he says, of a much less size, but in other respects fully equal to the European species; and this fact has been fully corroborated by a former pupil of our's, who has recently returned home, after a sojourn of seven months in a ship off this shore.

There are four large islands lying off the coast of Guinea, and these are next described by Dr. Daniell. The largest and most important is Fernando Po; it is thirty-five miles in length, and from fifteen to seventeen in breadth, and is the one chiefly

visited by the homeward and outward-bound merchant vessels that trade to this portion of the western coast of Africa. This island derives much interest, moreover, from the fact of its having been selected by the British Government in 1827 as a colonial settlement, on account of the enormous sacrifice of life at Sierra Leone. Its selection was due to the favourable views then entertained of the salubrity of its climate, views which our author believes to have been in no respect overrated. But, as he says, owing to the false reports of interested persons, and the jealous fears of the other African colonies of their rising rival, highly coloured statements were secretly circulated concerning the extreme unhealthiness of the island; the settlement was abandoned, and it is now under the dominion of the Crown of Spain. The diseases of the natives are comparatively limited; cutaneous diseases are rare, and the chief affections are rheumatic pains and pulmonary disorders, owing to exposure to the inclemency of the weather. The type of the endemic maladies is more inflammatory and less adynamic than on the neighbouring continent. Scarifications for the abstraction of blood are generally practised, and in more serious cases a rude and singular process of venesection is had recourse to; a vertical incision is made on both sides of the vein, which is then raised on the point of a spear and divided transversely.

Dr. Daniell entertains a very favourable opinion of the climatorial influence of this island on the European constitution, whether it be acclimated or unacclimated. Its seasoning fever or endemic remittent is much milder and less dangerous than that of the other deadly regions of Western Africa, rarely, if ever, assuming the pestilent or insidious asthenic type. He completely controverts the opinion of Mr. Boyle, whom he classes among those writers "who have directed their animadversions upon the insalubrity of Fernando Po," mentioning the curious fact, "that this officer, who was colonial surgeon of Sierra Leone, never once visited or resided on this island."

"To Europeans who have been stationed for any length of time in the rivers or inland districts of the Delta of the Niger, a visit to this island would be attended with many advantages, especially to those who have been sufferers from that low nervous irritability or mental despondency; distressing sequelæ that not unfrequently supervene after the visitations of remittent and other febrile diseases. In agues, chronic dysentery, and other morbid affections of obstinate duration, the change of climate often produces the most decided benefit, and I can only conclude these observations by remarking, that had those individuals, whose anxiety has hitherto been to depreciate the utility or decry the healthiness of this island, been resi-

dent for the same number of years with myself and others in the pestilent swamps of equatorial Africa, they would ere this have learned to appreciate the value of the boon so appropriately placed within the grasp of most African voyagers, and one which, above all other considerations, is prized by the convalescent, viz., the rescue from a premature death, and the restoration to the usual occupations of ordinary health."—p. 162.

Of the other three islands described, the Island of Princes has acquired a tolerable sanatory reputation, from the absence of swampy, low lands, and woody marshes; but, according to the experience of the author, at certain seasons of the year it presents little or no variation in the form, the type, or mortality, of its diseases, from the other habitable localities of the Bights, while it is frequently ravaged by epidemic scourges, which attack indiscriminately both black and white people. It cannot, therefore, be recommended either for the preservation or restoration of health.

The Island of Saint Thomas is more healthy than the Princes', but less so than Fernando Po. The fevers to which its white inhabitants are subject resemble those of the coast, but are more tractable in their cure and less adynamic in their type.

The Island of Anno Bona, the most southerly of the group, contains no white inhabitants. It has been considered, but the author thinks upon doubtful authority, to be the most healthy of all the islands in the Bight of Biafra.

We have now brought to a conclusion our brief notice of Dr. Daniell's volume. It contains matter of much practical interest, calculated to disseminate correct views of the nature of the influences which, in these regions, produce such deadly effect on the constitution of Europeans. In further inquiries as to the prevention of disease amongst the white inhabitants, attention should be chiefly directed to the effects of previous acclimation in countries varying less in atmospheric and other physical peculiarities from more temperate regions than the west coast of Africa does. Of the truth of this remark a singular fact is noticed by Dr. Daniell, namely, that the two healthy seasons for Europeans in Western Equatorial Africa are most unfavourable to the health of the Negroes, and *vice versâ*. We have been the more pleased with this volume, from the fact of its author being a military medical officer. We know that their laborious duties, so much increased by the system of keeping full reports of every case which may fall under their notice, too often render it impossible for the medical officers of the British army and navy to publish their observa-

tions of the diseases peculiar to various parts of the world, where they are thrown by their duties. We, therefore, feel the more thankful for a publication such as that we have been now considering, for we are confident that it is by similar writings the obscurity that still envelopes the endemic diseases of warm climates will be at length dispelled.

Medical Topography of Queenstown ; being an Examination into the Climate and the Influence it exercises on Disease, especially Pulmonary; with some Notices of the Natural History of the Locality. By David H. Scott, M.D., M.R.C.S., &c. Cork, Bradford and Co. 1849. Post 8vo., pp. 102.

A Treatise on the Climate and Meteorology of Madeira. By the late J. A. Mason, M. D., Inventor of Mason's Hygrometer. Edited by James Sheridan Knowles. To which are attached a Review of the State of Agriculture and of the Tenure of Land; by George Peacock, D.D., F.R.S., &c., Dean of Ely, and Lowndean Professor of Astronomy in the University of Cambridge. And an historical and descriptive Account of the Island, and Guide to Visitors ; by John Driver, Consul for Greece, Madeira. Liverpool, Deighton and Laughton. 8vo. pp. 388.

Changes of air, of scene, and of climate, have been long recognised as possessing an important position amongst the most powerful means which can be employed for the relief or cure of various diseases, more especially those of a chronic nature.

To the physician who is desirous that his patient should derive the greatest possible amount of benefit from such changes, the choice of a proper locality to send him to is often a matter of considerable anxiety; and to the patient himself the selection is frequently of vital importance. Hence all authentic information which is afforded upon the medical topography of the different places usually resorted to by invalids, must be acceptable to the profession as well as to the public.

Though there is no scarcity of authors who have written upon this subject, we consider that very few are capable of conducting such a series of observations, meteorological and general, as shall render their publications really valuable. For this purpose a degree of steady perseverance in making and an accuracy in recording observations are required, together with an amount of general information upon the various subjects concerned, which does not fall to the lot of every man; and though

many avail themselves of the valuable tables generally resulting from such investigations, few pause to reflect upon the amount of time, labour, and skill which are employed in their construction.

In the thirteenth volume of the First Series of this Journal there appeared a paper by Dr. Scott upon the medical topography of Cove, which forms the chief groundwork of the present volume. Additional opportunities, and a more extended period for repeating the observations, and testing the accuracy of the details already given, together with greater facilities for comparing them with the accounts published of other places, have enabled the author to add very considerably to the information contained in it; and he has introduced much new matter and numerous tables not before given.

Queenstown (formerly Cove) has been long favourably known to the public as possessing an extraordinary mildness of climate; and the results of the carefully conducted inquiries of Dr. Scott, contrasted with those made elsewhere, show that this fame has been well deserved, and that, in many respects, it is not inferior to any, but very much superior to most of the watering places in the south of England and France, yielding only to Madeira in the possession of the chief requisites which constitute any locality a safe retreat for the invalid suffering from pulmonary affections.

Many suppose that mere temperature is the all-important point for consideration in selecting a change of residence for an invalid, but several other matters as well are to be taken into account. The hygrometric state of the air; the general prevalence and comparative duration of particular winds; the manner in which these influence the condition and temperature of the atmosphere; the number of rainy days; the total amount of rain which falls, all form so many topics of necessary inquiry; and in the volume before us, these have not been overlooked or neglected.

After a general notice of the geographical position and geological peculiarities of the island of Cove, Dr. Scott gives the results of several years' careful notice of the temperature of the air by day and night, as ascertained by self-registering thermometers; and having furnished the *means* of these for the entire year, he adds a monthly summary, which is of great value.

He then proceeds to consider the distribution of heat in its different relations to the days, months, and seasons, comparing the observations made in Queenstown with those registered in some other places in corresponding years, and the entire

are carefully tabulated for easy reference. It appears from these returns, that Queenstown stands higher as to mean temperature than most of the places of repute in the South of England and France, possessing at the same time a most remarkable equability in the range of its temperature, which is of the first importance to the invalid; indeed, this very great equability is one of the chief characteristics of the place, and in this respect it is not equalled even by Madeira.

Much important information is conveyed respecting the variations and indications of the barometer, and, as before remarked, the hygrometric state of the atmosphere is most carefully noted. For full particulars upon these subjects, we must refer to the book itself.

From the numerous tables introduced by Dr. Scott, and the general amount of statistical information he has collected, we can learn that Queenstown possesses a remarkable salubrity and equability of climate, and that its inhabitants enjoy an exemption from many diseases which are elsewhere endemic. So rare, too, are pulmonary diseases, rheumatism, and those other affections most frequently benefited by change, that we may fairly conclude, the invalid who is obliged to leave home will find here as favourable and agreeable a place of sojourn as any which Great Britain or the continent of Europe can afford.

The publication of Dr. Scott is highly creditable to his talents and industry, and we are pleased to see it in its present form; it contains much useful information upon many points, possessing an interest as well for the physician as for the invalid and valetudinarian. The author has indeed entered, more fully than is usual in similar works, into many matters connected with the atmospheric and other peculiarities of the island; the general influence of the climate upon various diseases is set forth; the positions best suited for the residence of those suffering from different affections are pointed out; and some sketches of the botany and natural history of the district are appended.

So much has been published on the climate of Madeira that any new facts regarding its influence on disease can be scarcely expected; yet there has been hitherto wanted a complete register of the thermometrical and barometrical peculiarities of the island, on which implicit reliance could be placed; and this want is supplied by the late Dr. Mason's volume. Dying at the early age of twenty-eight, his name constitutes another addition to the list of martyrs in the pursuit of medical science which our profession has so lavishly supplied; and his labours

afford a melancholy proof that even disease and suffering combined cannot check the physician in his search after knowledge. Dr. Mason is well known to philosophers from his construction of the hygrometer which bears his name, and which is so easy, yet so true, in its application. Having been ordered abroad with the view of arresting the development of some phthisical symptoms from which he suffered, his scientific pursuits suggested to him the use of it, in addition to the other means ordinarily employed, in an inquiry into the climate of Madeira, whither he proceeded. His observations included from the 1st of March, 1834, to the 28th of February, 1835, and were taken with great regularity, those with the hygrometer "being made every three hours"(*a*). By these means he has been able to confirm the opinion put forth by Dr. Heineken, and which has been so generally overlooked by the profession, namely, that, during the greater part of the year, *the atmosphere of that island is saturated with humidity.* The confirmation of this fact we regard as of the greatest importance; for there is no condition of climate, due regard being had to equability of temperature, that affects the invalid so remarkably as the hygrometrical state of the atmosphere. In some consumptive patients the symptoms are ameliorated by breathing a dry air and the disease aggravated by moisture, while in others the reverse is the case. We therefore regard it an established rule to make particular inquiries on this head in every case, before recommending a special climatorial change.

Appended to Dr. Mason's researches is a meteorological register, kept at Funchal, Madeira, by Mr. M'Euen of Philadelphia, from the 10th of December, 1848, to the 1st of June, 1849. This is especially valuable in consequence of the recent date at which the observations were made, and its corroboration of the opinion put forth by that physician regarding the variability of the climate even in that island.

We cannot now enter into any analysis of this volume, indeed it scarcely admits of it; but we strongly recommend it to our readers as affording most useful knowledge on a subject on which they are so frequently obliged to exert their judgment. It also forms an excellent source of information for persons about to visit Madeira; and its beautiful typography and binding render it an ornamental book for the table. Indeed we cannot take leave of the two volumes we have now noticed without referring to the admirable style in which they are printed, both having been published in provincial towns, that of Dr. Scott in Cork, and that of the late Dr. Mason in Liverpool.

(*a*) Page 7.

The Three Kinds of Cod Liver Oil comparatively considered, with reference to their Chemical and Therapeutic Properties. By L. J. De Jongh, M. D., of the Hague. Translated from the German, with an Appendix and Cases, by Edward Carey, M. D. London, Taylor, Walton, and Maberly. 1849. 8vo. pp. 176.

Treatise on the Oleum Jecoris Aselli, or Cod Liver Oil, as a Therapeutic Agent in certain Forms of Gout, Rheumatism, and Scrofula: with Cases. By John Hughes Bennett, M. D., &c. London, Highley. 1841. 8vo. pp. 180. With an Appendix for 1847. Edinburgh, Maclachlan. 1848. 8vo. pp. 197.

On the Structural Relation of Oil and Albumen in the Animal Economy, &c., &c. By John Hughes Bennett, M. D. Pamphlet, pp. 10. 1847.

On the Use and Administration of Cod Liver Oil in Pulmonary Consumption. By C. J. B. Williams, Professor of Medicine in University College, London. From the London Journal of Medicine for January, 1849.

Cod Liver Oil, its Uses, Mode of Administration, &c. &c. Compiled by John Rayner. London, Churchill. 1849. Pamphlet, pp. 16.

An Inquiry how far Consumption is curable, with Observations on the Treatment, and Cases illustrating the Efficacy of Cod Liver Oil. By James Turnbull, M. D., Physician to the Liverpool Infirmary. From the London Journal of Medicine for February, 1850.

It has been remarked, as well by discoverers as by those who have reaped the profits of their genius, that great improvements in the arts and sciences make slow progress among mankind,—a complaint indisputably well founded, in spite of some remarkable instances to the contrary. Few will doubt that, on the whole, this slow reception of great inventions, though in itself an evil, has been of no inconsiderable benefit to the human race. To disbelieve the *new* is a deeply-fixed principle in even the best regulated mind. But we must not forget that, in this case, experience aids the natural impulse; since, unfortunately for the interests of all that is great in humanity, in disbelieving the *new*, we are in the majority of instances disbelieving the *false*. It would have been well for the medical Art if its professors

had been as sceptical of the new as mankind in general are. The facility with which a physiological hypothesis, or a supposed curative agent, becomes adopted by medical men, is probably, at the present moment, the greatest obstruction to the firm advance of our science. How much of the results of the wrong-headed belief of our immediate predecessors are we yet engaged in throwing down ; and how much do we see constructed by our own generation that must share the same fate at the hands of our successors. Let but a new remedy be suggested, and the whole world is ready to sink the clearest pathological distinctions, and believe the most opposite diseased conditions susceptible of its curative powers. Digitalis, colchicum, creasote, naphtha, prussic acid, stramonium, iodine, and many other equally valuable medicines, have suffered from the baneful effects of exaggerated advertisement followed by irrational belief. For, as might be expected, when the transcendant merits ascribed to new remedies are found, after previous full belief in the truth of the first statements concerning them, to be for the most part a mere fiction, it is an easy step to complete disbelief of their possession of any virtues; and it is only after great labour, a collection of irrresistible facts, and the lapse of considerable time, that the *active* prejudices of the medical mind can be overcome, and a perhaps important medical agent placed on its true basis. Such has been the actual progress of therapeutic medicine in our times, whether we consider drugs simply or more general therapeutic systems. Rapid rise, sudden decadence, slow and painful resuscitation, and final just localization in a place very far below their original high status, are the great features of their history. May we not state this of digitalis as a drug, and of water as a system?

The oil of the cod's liver has not, however, suffered from an over-ardent belief in its powers, at least in this country. It offers a singular exception to the general history of great remedies in this respect. It is certain that it has been used from time immemorial as a popular remedy in the northern regions of Europe, whence it is probable that it found its way into Germany and Holland, in both of which countries it was long used by the people before medical practitioners recognised its remedial properties. Naegele, the celebrated Heidelberg Professor, informed Dr. Bennett

"That during a period of eleven years that he practised at Dusseldorf, no peasant ever applied to him, whatever was his complaint, without having previously tried the cod liver oil. It is their universal practice when ill, first to take the oil, and if it fails, then, and not till then, to ask a medical man for advice."

It appears to have been almost as generally used in the north of Scotland, but the first authentic account of the oil by members of the profession was given by Percival, Darbey, Bardsley, and Kay, all of Manchester, where it was introduced in 1766. It was used in the infirmary of that town almost exclusively as a remedy for gout and rheumatism, and was considered so efficacious, that in 1807 Bardsley states:

"This medicine has preserved its reputation in our infirmary unimpaired during the period of thirty years, for I find its annual consumption to have been from fifty to sixty gallons soon after its introduction in 1766; and the quantity dispensed for many years back has seldom fallen below the above amount; the last year it exceeded forty gallons"(*a*).

In 1822 Schenk published in Hufeland's Journal sixteen cases of chronic rheumatism, which he had successfully treated with the cod liver oil. These cases, says De Jongh, as well as twenty others, which he published four years later, established anew the virtues of the cod liver oil in chronic rheumatism, and first excited medical men to examine for themselves what were the virtues of this medicine, the reputation of which, since the year 1815, had been in vain bruited from the banks of the Rhine, from Westphalia, and from the mountains of Scotland.

Schenk used it in rheumatism, gout, and scrofulous affections, and held it to be as much a specific in these diseases as bark in ague, and mercury in syphilis. Immediately after Schenk's cases became known to the profession, the German and Dutch physicians seem to have emulated each other in using and reporting upon this remedy. Dr. Bennett talks almost complainingly in his Preface of the forty German medical periodicals, which were the sources of his information; while, after the very favourable account of its effects by the Manchester physicians, the profession seemed in this country to have almost lost sight of it. A slight notice of its value as an application to impetigo of the hands, by Marshall Hall, in the tenth volume of the Medical Gazette, and a short paper by Mr. Donovan in our former Series(*b*), constituting the sum total of English literature on this subject, until the appearance of Dr. Bennett's treatise in 1841(*c*). It is impossible to deny to this physician the great merit of having been the first to

(*a*) Dr. Bennett's Treatise, p. 15. (*b*) Vol. xvii. p. 357.

(*c*) There can be no doubt that the oil, during this period, was used, to a certain extent, in different parts of England. We have heard from private sources of its having been much employed in Derbyshire as an anti-rheumatic remedy.

bring the cod liver oil prominently before the notice of the medical profession of this country, having previously, with the greatest industry and ability, collected all the established facts concerning it; at the same time attempting a rational explanation of its mode of operation, which, possibly modified, must, we believe, form the basis of any future sound theory of the matter. Dr. Bennett's exertions to introduce the oil to the profession do not appear to have been confined within the limits of the treatise at the head of this article, for in the Appendix for 1847 we are told that he had strongly recommended its use to his medical friends, and that all those who could be induced to try it spoke most favourably of its great powers.

We wish to impress these facts upon our readers the more distinctly, as we see a decided impression exists among the profession that the recent paper of Dr. Williams in the London Journal of Medicine, has been the main cause of the general introduction of the oil into medical practice; an impression which the very dexterous juxtaposition of certain sentences in that paper is well calculated to produce, but which is not the less opposed by the facts of the case. It is observed in the paper alluded to, that

"If the experience of other practitioners accords with my own on this point, I would give as the reason of this tardy introduction, the disgusting smell and taste of the oil, as it has been commonly prepared, and an impression generally prevalent, that the efficacy of the remedy is connected with these offensive properties."

Now, in the first place, it is necessary to state that at the time the above sentence was published the oil was actually in extensive use in Edinburgh and in this city; and we happen to know that for a considerable period before the journal, in which it was written, saw the light, it was given to a great extent, and most successfully, by the physicians of one of the largest provincial hospitals in the kingdom, in the very disease in which its benefit has been so signally illustrated by Dr. Williams. But that gentleman wishes his readers to imagine that the want of a pure oil was the obstruction to its general use, and that he having, in conjunction with an eminent London druggist, supplied the desideratum, there is no reason why *now* the profession should not commence to use it. This is very ingenious; but why did Dr. Williams let his readers into the secret of his knowledge of Mr. Donovan's preparation of pure oil(*a*), made *before* the date of Dr. Bennett's Treatise, wherein full infor-

(*a*) See the Essay of Mr. Donovan, *loc. cit.*, and vol. xxviii. p. 40.

mation concerning it may be found? That able chemist and Dr. Edmondston of Shetland, appear to have arrived at a perfection of preparation which might have stimulated Dr. Williams to a full trial of its properties. "English stomachs," we should have fancied, would have found no difficulty in taking an oil bearing the following characters:

"The oil obtained by Mr. Donovan has a specific character of ·934, is of a pale yellow colour, and the taste resembles that of a cod boiled for the table, when in excellent condition. It is bland, by no means disagreeable, and totally free from rancidity. It is very liquid. In cold weather it deposits much stearine, and this ought not to be separated. The oil prepared in Shetland has a mild, but slightly fishy taste, a faint, but peculiarly marine smell, a greenish colour, and a consistence nearly that of castor oil."

So far as this point is concerned, therefore, we would suggest that Dr. Williams' chief merit consists in having very prominently advertised a London tradesman's operative skill, and his own tardiness in accepting medical improvements from other quarters. We are constrained to deny that Dr. Williams has accurately stated the fact, when he informs us that Dr. Bennett has favoured the notion that the efficacy of the remedy is connected with its offensive properties. We would refer our readers to the part of his original essay which refers to the methods of preparation, in proof that almost the contrary to this is more nearly the truth. The oil described as "red," "golden yellow," "resembling old Malaga wine in colour," examined by Dr. Bennett at the meeting of a medical association at Wildbad, and expressly stated (p. 20) "to be transparent, and less disagreeable to the smell and taste than that of a *light straw colour*,"—an oil equally expressly stated to be used, for the most part medicinally, throughout Germany,—subsequently examined by him in Mayence,—found in a great Parisian house afterwards, and, wonderful to relate! in London itself(*a*), not to speak of two great Edinburgh houses, where it was the only variety known,—an oil declared "to be the best"(*b*) in the general summary of the facts of the Treatise, and most pointedly alluded to in the Appendix for 1847 as having been universally employed in Edinburgh, and been productive of the best effects, as in Germany,—the oil everywhere commended by Dr. Bennett for medical use,—does by no means warrant the assertion that he has connected its therapeutic efficacy with any offensive properties.

(*a*) At Messrs. Jones and Co., Gracechurch-street. (*b*) Page 175.

In reference to the superior virtues of the "pure oil," as Dr. Williams terms that which is *nearly free from taste and smell*, it becomes both him and us to speak with modesty at least. Nearly all experience is against Dr. Williams here. Richter, at one period of his researches, denied any therapeutic value to the paler oil; and we shall not affect to inform him that the chief German physicians, after the most extensive trials, have ever given the preference to the *quasi*-impure dark oil, which he has failed to introduce into the stomachs of his patients. We have used an oil, possessed certainly of sufficiently "offensive properties," in a vast variety of tubercular and strumous affections, and our results have been fully as favourable as those *proven* to have occurred in Dr. Williams' cases; and we can add our experience to that of Dr. Bennett(*a*), that children will sometimes take even this oil with extravagant fondness. With our present knowledge, it is certainly injudicious to aim too much at pleasing the palates of our patients by the selection of an oil possessed of the characters mentioned in his paper; but we must allow De Jongh, an authority not easily to be confuted on this point, to state his opinion:

"So long, indeed, as it is left undecided to which constituent part the cod liver oil owes its efficacy, we would not advise the consideration of its agreeable qualities to be urged too far. A well-tasted cod liver oil may be prepared in the above-mentioned [Mr. Donovan's] manner; but it will be found wanting in the component parts of the watery extract [biliary matter], and probably also in the volatile acids, together with the gaduine. That poisonous properties(*b*) are generated by the staleness of the livers is not probable; because, by the constant use in Holland of the brown oil, which is frequently obtained from the stale livers, such an effect would have been observed."—p. 70.

De Jongh(*c*) has given decisive evidence that the three kinds of oil owe their individual characteristics solely to the time and heat employed in obtaining them; that they are, or rather may be, but three varieties of genuine Bergen oil, the product exclusively of two (or at most three) species of the genus *Gadus*. He has brought forward some facts which, though certainly insufficient to *prove* his opinion, should at least en-

(*a*) Appendix for 1847, p. 182.

(*b*) Dr. Bennett also (p. 29) controverts Donovan's opinion concerning the evil effects of putrescency in the oil.

(*c*) The father of De Jongh is a Bergen oil merchant, and his son appears to have fully availed himself of this circumstance to get the most accurate information, which he obtained direct from the Dutch consul at Bergen, and other authentic sources. See p. 6, *et seq.*

gender a suspicion that the brown oil, that oil which is affirmed to be prepared by boiling or roasting *putrescent* cod livers, possesses a higher therapeutic value than the other varieties. We have just seen that the paler oils are wanting in the biliary matter, and probably in the volatile acids, to the more copious formation of which the long operation of heat on the brown oil contributes; and De Jongh further expresses his belief that this latter oil owes its greatest power to this biliary matter and butyric acid. Klencke(*a*) infers the importance of the biliary matter, without having known of its existence in the cod liver oil; for he declares the yellow cod liver oil to be a substitute for bile; and the German translator of De Jongh's Treatise states, in reference to the substitution of other oils and fat, that the presence of the constituent parts of the bile establishes the difference, and gives the preference in favour of this oil. Even Dr. Williams(*b*) has observed its power in restoring the appetite and improving digestion, and believes that this peptic influence is due to its containing some biliary principle, which both favours its divisibility in the process of digestion, and promotes the natural secretions of the liver; but if this be the fact, and if De Jongh's analysis be correct,—and we fully believe both,—then Dr. Williams has been using an oil of the least efficacy. On the whole, it must be fairly admitted that at present there are no well-established facts in proof of the so-called *pure oil* being the most efficient, or even as being equally efficient with other varieties; while, on the other hand, we are very far from asserting that the brown or red oil of De Jongh and Bennett have been decisively proved to possess qualities superior to the former variety, and connected with their marked physical characteristics.

It is obviously a little too soon to dogmatise on this point, and not more premature than unsafe. It is important that the cod liver oil should come into general use as an anti-strumous agent, and to this end it is well that the profession should be aware that *there is no oil so bad as to have been proved to be without most valuable properties as a curative agent, nor so good as to have been demonstrated to be therapeutically more potent than the worst.*

Dr. Williams has added his experience to the existing stock of information concerning the value of this oil in phthisis, and has thereby given weighty confirmation, from his well-

(*a*) Klencke's views are referred to in several portions of De Jongh's Treatise.

(*b*) London Journal of Medicine, No. i. p. 16.

known skill in thoracic physical diagnosis, to the already received opinion among enlightened members of the profession; and we should not have thus early entered into an examination of certain parts of his paper, bearing upon the early use of the oil, were it not for the purpose of removing an impression likely to be produced by them, injurious to the just claims of Dr. Bennett, as the prime promoter of its use in these countries. It was enough punishment for the introduction of one of the very greatest therapeutic agents of the age,—one which has, we confidently believe, permanently extended our power over the most fatal and the most frequent of human maladies,—to have been scoffed at by the critics(*a*) for having taken such pains in introducing to the notice of his brethren any *single* therapeutic agent, not being, moreover, a remedy of *delicate use*, in regard to which minute details might be justifiable, the effects of which, too, were either indeterminate or unsatisfactory. It was enough to be satirized for conferring the benefit, without being forgotten when the benefit became patent and recognised by all. This is a double injustice, which it is impossible for any man to deserve, and against which, while we undertake the responsibility of criticism, we shall ever raise our voice.

We will now proceed to analyse the chief features of Dr. De Jongh's Treatise, in doing which we shall have frequent occasion to refer to the other Essays we have placed at the head of this article. In the first section we find a highly satisfactory account of the source, method of obtaining, and physical properties of cod liver oil. It appears pretty certain that the several species of *Gadus*, at least six, are used everywhere indiscriminately for the production of the oil,—depending, probably, as Dr. Bennett has suggested, upon the greater or less quantity of the various species found on particular coasts. The term "oleum morrhuæ," so generally used in this country to indicate the cod liver oil, is only so far correct, as applied to the oil obtained at Newfoundland, or on our own coasts, the Bergen oil, which is alone officinal in the German Pharmacopœias, being exclusively obtained from the *Gadus carbonarius*, *Gadus callarias*, and *Gadus pollachius*.

De Jongh makes three varieties of oil, the clear pale (*Oleum flavum*); the light brown (*Oleum subfuscum*), and the brown (*Oleum fuscum sive nigrum*). Dr. Bennett makes four varieties, according to De Jongh, without sufficient reason,—the pale, yellow, red, and brown. Both these authors give the most

(*a*) British and Foreign Medical Review, vol. xiii. p. 197.

varied statements concerning the method of obtaining the oil, from which one conclusion is clearly derivable, that very different modes are actually employed in commerce. In order to get more precise information, De Jongh, as we have already stated, forwarded queries to persons residing in Bergen and Tromsoe. The following answer of his chief correspondent embodies the main facts of both Treatises on this question:

"As soon as the fish is brought to land, the livers are cut out and thrown into vessels, where they ultimately remain. If this is done at irregular times, the pale oil is not so clear and pure as when the fishery is concluded at once. When the fishery is ended (and for which there is no fixed time), the clear oil which comes off in these vessels is skimmed, poured off, and put into barrels. This is the pale oil. The residuum is then boiled, and thence is produced the brown oil. The light-brown oil is the impaired pale oil; partly because the livers have lain too long, and partly because the pale oil is old, and has remained in warehouses, where it has been exposed to damp. The clearness of the pale oil depends particularly on the fatness of the liver, and on the method of preparation."—p. 8.

In another letter it is stated that the livers of from 40 to 80 cwt. weight of stockfish are thrown into tubs, and are allowed to remain there until they become putrescent, when the oil runs off of itself; this, when skimmed, is the pale oil. We are also expressly told, that all these kinds of oil are prepared alone from fish *livers*.

We will now proceed to lay before our readers the main results of De Jongh's analysis of the oil, by far the most important section of his book, but upon which we must dwell very briefly. The German translator remarks that almost all previous analyses were directed towards the verification of the presence of iodine, of which there is abundant evidence in the treatises both of De Jongh and Dr Bennett. The latter took infinite pains to satisfy himself upon this particular, and arrived at the same conclusion, and in all essential points by the same process, as De Jongh. The process of this chemist, and that of Dr. George Wilson, given in Dr. Bennett's Treatise, differ only in comparatively unimportant details.

Up to the time of these researches, the greatest difference of opinion prevailed upon a point, apparently so easy to settle, as the existence or non-existence of iodine; a difference explained by the circumstance(*a*), that mere solution in alcohol,

(*a*) De Jongh's Treatise, p. 17. We subjoin the details of the process for the discovery of the presence of iodine. The oil is saponified with pure potash or soda in excess, and by long boiling evaporated to dryness; the soap is carbonized in a platinum crucible, and then saturated

ether, or water, or even the direct carbonization of the oil and treating the carbon by means of solution, fails to prove its existence, which can only be effected by the saponification of the oil with potash or soda. The soap in most cases gives off the iodine by direct solution in alcohol and testing the solution with sulphuric acid and starch, though it is stated that it is better at all times to carbonize the soap previously. When the separated soap is decomposed by an acid, the iodine remains in the oleic acid,—the mother-liquor is consequently free from iodine. Hence, the German translator remarks, the opinion that iodine is held free, or as hydriodate of soda, in cod liver oil, is erroneous, "as it is in every case found in organic combination, perhaps with a fatty substance," and, with De Jongh, states strongly his belief that real and *unrefined* cod liver oil always contains iodine, and that its presence is a proof of its genuineness(*a*). It is remarkable, and should be remembered in therapeutic history, that Kopp believed that the oil contained iodine, from its effects upon the human economy; and that the researches by Hopfer de l'Orme, which eventuated in its discovery, were made at his suggestion, under the influence of this impression.

The watery extracts of the three sorts of oil are declared to be perfectly similar in their qualitative relations, while there is a marked difference in the *relative proportions* of the individual substances separated from them. Their successive solution in ether and rectified spirit showed that the cod liver oil must be mixed with the component parts of bile; the ethereal extract contained fellic acid, choleic acid, margarine, a little oleine and bilifulvin; the alcoholic, bilifulvin, bilifellinic acid, and two apparently peculiar bodies. The result of De Jongh's analysis is decisive that there is a larger proportion of these biliary ingredients in the brown than in the light-brown, and, to a much smaller extent, however,—in this latter oil than in the pale variety.

We shall not venture to pledge ourselves to the quantita-

with carbonate of ammonia, and dissolved in water or alcohol. In the latter case, after the evaporation of the solution, there remains a pretty nearly pure hydriodate of potash or soda, which may serve for the quantitative analysis. In the qualitative analysis the iodine is best discovered by putting the evaporated watery or spirituous solution of the carbonised soap which contains the salt mass into the bottom of a glass tube, with some concentrated sulphuric acid poured on it; then, placing in the opening of the tube some starch paste, it should be gently warmed. The ascending vapour of iodine, if any be present, will show a deep violet colour.

(*a*) It is important to mention that De Jongh found more iodine in the pale than in the brown variety, in the proportion of 0·0374 per cent. to 0·0295 per cent.

tive, or, in minute particulars, even to the qualitative analysis of our author, holding as we do a most wholesome scepticism of the perfect accuracy of even the best performed organic analysis; and if there were any animal secretion which should more than another justify this, that secretion is the bile, in which the existence of an important element in large quantity has been discovered since the date of De Jongh's Treatise in its original language ; but it is impossible to read the careful and elaborate researches therein reported, without being convinced of the presence of bile in the oil, and that to a marked degree in the brown variety.

The next portions of the analysis are taken up with the consideration of the glycerine and fixed fatty acids, after which we find "gaduine, the brown substance of the cod liver oil," examined. It has hitherto been a question, says De Jongh, concerning the nature of the substance which adheres so pertinaciously to the oleic acid of the cod liver oil, and which accompanies it through the whole process of saponification and separation; it is shown that by the saponification of the impure oleic acid with an excess of soda, the greatest part of it goes over in the alkaline ley. By an easy chemical process, a brown substance is obtained from the ley, of the very same compound nature, and possessing precisely the same qualities in the three kinds of oil; to this substance De Jongh, its discoverer, has given the name of gaduine. Some of its principal characters are the following; in the mass it is of the consistence of wax, and of a dark brown colour; *it smells of cod liver oil;* dissolved in water, it is almost perfectly bleached by chlorine gas; it is insoluble in water; its formula, free from water, is $C_{35} H_{42} O_7$. As a perfect separation of this substance from the oleic acid has not been effected, it cannot be determined by the quantitative analysis.

De Jongh next enters upon the consideration of the butyric and acetic acids, neither of which has been found by previous analysts ; but as he was unable to detect the phocenic acid discovered by Chevreul in the oil of the dolphin, and which has been asserted to exist in the cod liver oil, he supposes that acid to be a mixture of acetic and butyric acids. We have already hinted that the brown oil contains a much larger quantity of these acids than the pale,—a fact worthy of being remembered,—though we can scarcely agree with the author, that these acids have very much to do with the therapeutic properties of the oil. Then follows an account of the inorganic constituents, of one of which, perhaps the most important,—Iodine,—we have already spoken. Next we find, taken up in

succession, bromine, chlorine, phosphoric and sulphuric acids, phosphorus, sulphur, and, finally, the bases lime, magnesia, and soda.

Our readers may now form an idea of the complex chemical nature of this oil, and will probably be disposed to conclude that it is somewhat premature to restrict its curative properties to this or to that principle. But we feel we should be scarcely doing justice either to it or to the author, did we not extract the general summary of the results of the analyses.

	Brown.	Light Brown.	Pale.
Oleic acid, with brown substance (gaduine, and two peculiar bodies), .	69·78500	71·75700	74·03300
Margaric acid, ...	16·14500	15·42100	11·75700
Glycerine, ...	9·71100	9·07300	10·17700
Butyric acid, ...	0·15875	. . . .	0·07436
Acetic acid, ...	0·12506	. . . .	0·04571
Fellic and choleic acids, with some oleine, margarine, and bilifulvin, . .	0·29900	0·06200	0·04300
Bilifulvin and bilifellinic acid, and two peculiar substances, ...	0·87600	0·44500	0·26800
A peculiar substance, soluble in alcohol of 30°, ...	0·03800	0·01300	0·00600
A peculiar substance, insoluble in water, alcohol, and ether, ...	0·00500	0·00200	0·00100
Iodine, ...	0·02950	0·04060	0·03740
Chlorine with some bromine, ...	0·08400	0·15880	0·14880
Phosphoric acid, ...	0·05365	0·07890	0·09135
Sulphuric acid, ...	0·01010	0·08595	0·07100
Phosphorus, ...	0·00754	0·01136	0·02125
Lime, ...	0·08170	0·16780	0·15150
Magnesia, ...	0·00380	0·01230	0·00880
Soda, ...	0·01790	0·06810	0·05540
Iron, ...	A trace.		
Loss, ...	2·56900	2·60319	3·00943
	100·00000	100·00000	100·00000

One glance at this analysis serves to show a considerable difference in the three oils.

"If we now turn to the comparison of the three kinds of cod liver oil, it is shown, first, that the lighter kinds are richer in inorganic substance (as well as in iodine(*a*)) than the brown kind; whilst, on the contrary, the latter is richer in the component parts of the bile, butyric and acetic acids. In general the light brown and the pale oil agree in every respect, much more than the brown, by which it is established that the light brown is only a pale oil which has become old. The great quantity of salts, iodine, and

(*a*) Entirely opposed to the general opinion.

phosphorus, contained in the light kinds of cod liver oil, must be thus explained,—that the richest oil, when flowing off quickly, takes up and dissolves the smallest quantity of these substances contained in the livers; while, on the other hand, the last oil, which comes off with the assistance of heat, appears to dissolve the substance of the bile somewhat more copiously."

The trace of iron is merely casual, being derived from the iron kettles in which the livers are boiled or roasted.

However modified this analysis may be, by future investigators, there can be but little doubt that we have all the data necessary, as far as chemical analysis can assist us, for the formation of a rational hypothesis of the mode of action of the oil. It is certain that in giving this oil we are giving a weak solution of these powerful elements, namely, iodine, chlorine, and bromine, which, howsoever combined, appear to exert a marked influence upon the capillaries, and, through them, upon the growth and nutrition of the body, to which we may add phosphorus, whose energetic action upon the same system of vessels we are only commencing to recognise. But, not to speak of other, probably not unimportant constituents, we are also giving a ready-made solution of a complex animal secretion, which has already discharged a function of the first importance in the chemico-vital processes of assimilation in the economy; and this solution is an animal oil,—the very basis of cell-growth,—the first stone of the great fabric of animal life,—indissolubly intertwined with those functions upon which its continued existence depends. Who shall put his finger upon a constituent of this solution and say, *this* and *this only* is the source of its manifold virtues? But we are anticipating the course of our review.

We have already laid before our readers a brief statement of the history of the use of the oil. They will find a copious resumè of this part of the subject in the Treatises of Drs. Bennett and De Jongh. The learned German translator has here made many additions to the latter, but we must hasten forwards to the following part of the subject, upon which we shall have much to say.

Upon the first inspection of the section, "On the Diseases in which the use of the Cod Liver Oil is recommended," that which immediately strikes the mind is, their number and apparently opposite characters,—a circumstance, we are afraid, which is likely to engender a suspicion that it belongs to those remedies which have so often been asserted to cure, in a certain inscrutable manner, all human maladies, and which have almost equally often turned out to be very plain remedies,

suited to a very few diseases. But we caution the inquirer, at the outset, not to fall into error upon a point so likely to mislead; for the truth is, that, with but few exceptions, all the diseases herein named have a certain family resemblance, and, for the most part, a similar pathology at their origin. And even if this were not the case, it must not be forgotten that we are here dealing, not with a simple binary combination of a negative and positive electric,—for example, iodide of potassium,—but with an agent of the greatest complexity; with the actual curative ingredient of which, if there be but one, we are not certainly acquainted. This latter consideration should alone be sufficient to counteract a scepticism which would be but reasonable in such a case as that just put.

We have already said that, at first, the cod liver oil was almost exclusively used for rheumatism, and, if Dr. Garrod will still allow us the phrase, the *allied* affection, gout. It was held in the highest repute in the former of these affections by Percival and the Manchester physicians, more than seventy years ago; and De Jongh's dictum, "that all medical men agree in extolling cod liver oil as a remedy in chronic rheumatism," is indisputable. We have already stated that at its introduction it was used in Manchester chiefly as an anti-rheumatic remedy. Dr. Bennett quotes the following interesting account, from Percival's Essays, of the circumstances which led to its being prescribed:

"A woman who laboured under the most excruciating rheumatism, and was an out patient of the Infirmary, being advised to rub her joints with the oil, was induced to take it at the same time internally. A few weeks restored her to the use of her limbs, and she was cured. However, little attention was paid to this case, as it was supposed that the alteration of the weather, and the medicines she had taken before, had caused the cure. About a twelvemonth afterwards, her complaints returned with double violence, and the same remedy restored her to health again. Encouraged by this second recovery, Dr. Kay, one of the physicians to the Infirmary, prescribed it for other patients, in similar cases; and it answered his most sanguine expectations. Since then it has been used by the other physicians with the greatest success."

Dr. Percival compared the effects of guaiacum and the oil, by prescribing each for different patients in similar circumstances; these trials almost always terminated in favour of the oil. Frequently those taking the guaiacum were so sensible of making slower progress than their fellow-patients, that they requested the oil to be given to them. A great array of authorities, interspersed with some selected cases, in proof of the effi-

cacy of the oil in rheumatism, is quoted in the treatises before us. De Jongh successively enumerates rheumatismus chronicus, ischias rheumatica, cardialgia and hemicrania, prosopalgia rheumatica, in which diseases there seems a pretty general agreement as to the virtues of the oil; but we feel bound to state our conviction that rheumatism is not the disease in which they are most obvious. We admit that we have not given it so much in this and congeneric diseases as in those of a more exclusively strumous nature, but our experience leads us to concur with the opinion, "that by far the majority of cases of chronic gout and rheumatism, particularly in adults, will not own the oleum jecoris aselli as a radical curative means"(*a*). Probably, as Dr. Bennett has hinted, its remedial effects depend very much upon the exact discrimination of the cases suitable for its use. Dr. Bradley found it to be most efficacious in the chronic rheumatism of elderly persons, when the muscles and tendons have become rigid, and the joints nearly inflexible, in consequence of the disease having been brought on by excessive labour, hard fare, dampness, and cold; and in women whose constitutions have been worn out by repeated rheumatic attacks after parturition, and more especially in the decline of life. Yet this able physician, while admitting that in some cases, after everything else had proved unavailing, the most astonishing benefits were derived from the oil, observes, "that it frequently failed in some of the mild and more common rheumatic affections."

Dr. Bennett, whose observations on this part of the therapeutics of the oil we would especially commend to the notice of our readers, still further specifies the forms of rheumatism in which it is most serviceable. He denominates them: first, the general; second, erratic; and third, local forms. In the first he places

> "Those cases where the gout or rheumatism appears to have seized upon the whole system, and where, in the result of long suffering, the body is wasted, the process of nutrition very low, there is want of sleep, loss of the vital powers, peculiar cachectic expression of countenance, and contraction of the muscles."

Of the benefit of the oil in this form he gives a case from Brefeld, and one from the practice of Dr. Frech of Baden Baden. The cure in the latter case was effected in ten days.

In the second or erratic form, the pains are less violent and

(*a*) See the analyses of the treatises of Klencke and Pancke in the fourteenth volume of the British and Foreign Medical Review.

the movements of the affected parts, although restrained, are not abolished. Usually only certain portions of the limbs are affected, which are sometimes disposed to be œdematous. The pains and swelling are often changeable, and undergo exacerbation at night and in damp weather. This affection, popularly called flying rheumatism, is also attended with general cachexia and suffering, loss of appetite, &c. In such cases, according to some physicians, the cod liver oil is *infallible*, its external use being often conjoined with its internal administration. We cannot give much credit to Dr. Bennett for having offered *proof* of the benefits of the oil in this form.

In the third the affection is confined to a single part, and is of a more acute nature than the preceding, being generally induced by an improper or inert mode of treatment during the acute attack, or a continued exposure to the causes which originally produced it. Its use in this form is well illustrated by two cases. The first is described as "chronic lumbago, succeeding an acute attack; *scrofulous constitution;* state of cachexia; moxas and blisters without effect; ol. jecoris aselli: cure in three months." The second as "chronic lumbago of several years' standing; difficulty in walking; cachexia with œdema; ol. jecoris aselli: cure in seven months." In both cases, remarks Dr. Bennett, the general constitution had suffered, and a highly cachectic state been induced; that state, indeed, in which the oil, from experience, has been found to be so beneficial.

Some excellent observers have denied any efficacy to the oil in pure neuralgia. Professor Romberg, of Berlin, never found it of value in a case of undoubted neuralgia; but here the difficulty of discriminating the exact nature of the case must be taken into account. De Jongh makes some excellent observations upon its use in cases of true palsy dependent upon rheumatism of the sheaths of the nerves, occurring in a rheumatic diathesis, and excited by atmospherical influences, as by cold. This author believes the oil to be most powerful in these cases, when the disease has not lasted too long, and when there exists no permanent lesion in the diminished space of the nerve-sheath. There can be no doubt that sciatica is, in a great majority of cases, a real inflammation of the nerve-sheath, occurring chiefly in persons of the rheumatic diathesis; and though, when vigorously treated by local antiphlogistic means and mercurials at its first onset, not generally a very unmanageable affection, yet, when occurring in weak and cachectic subjects, sufficiently often embarrasses the physician to render him very willing to accept a remedy, whose merits have been so highly extolled in

rheumatic diseases, as the oil(*a*). De Jongh adduces several authorities in favour of its use in this disease; and Dr. Bennett records a case of great interest, where, after cupping, mercurial ointment, and blisters, had been used without effect, and the affected limb had become atrophied, the cod liver oil was attended with the best effects, the patient being able in six weeks to resume his duties. We can also bear our testimony to its occasional great benefits in this affection; but it has more frequently in our experience *proved of no service*, possibly owing more to a difference in the nature of the cases than to any other cause. It is certain that there is no disease, or rather symptom, dependent upon a greater number of entirely distinct pathological causes, than sciatica; a circumstance connected with the diagnostic difficulties of this and allied disorders which should make us "pause before we form a rash opinion, either confirmatory or condemnatory, of its alleged therapeutic properties."

Concerning the use of the oil in gout it is at present impossible to form an accurate opinion. The most diverse conclusions have been arrived at by the German physicians; and we believe it has been scarcely used in this country to a sufficient extent to warrant any very strong statement upon the question. We must leave it, therefore, as Dr. Bennett did nearly ten years ago, *in dubio*. We shall only state our belief that its use will be found to be beneficial in certain cases only of the chronic form, and, for the most part, when it occurs in worn-out constitutions.

Looking at the present evidence concerning the use of this oil in rheumatism and allied affections, we think it is pretty evident that *selected cases* only are susceptible of its remedial influence; that it is by no means of general, or, so to speak, of indiscriminate value; that it is entirely contra-indicated in general fever; that it generally relieves most where rheumatism exists in a scrofulous diathesis, or in a cachectic habit of body(*b*); and that those who give it the fairest trial will soon,—as Dr. Bennett, in the Appendix for 1847, informs us of his own practice,—confine its use to cases of *very chronic rheumatism, attended with emaciation.*

As an anti-strumous remedy it is scarcely possible to exag-

(*a*) We must not omit to mention that Dr. Seymour, in his excellent essay on sciatica, has excluded the oil from any pretensions to being remedial in that disease.

(*b*) See in De Jongh's treatise the German translator's opinions upon this question, page 85. It is remarkable that in their general summary of diseases benefited by the oil, neither Klencke nor Pancke mentions rheumatism. See the analysis of their treatises before referred to.

gerate the merits of the oil. All authors, whether British or foreign, who have tried it, are agreed that in this point of view it possesses the highest powers. We believe, with Brefeld, that there is no remedy which at all approaches its therapeutic properties in scrofulous disease. It is an undoubtedly powerful medicine, operating in a peculiar specific manner, and affording relief in cases which, to all appearance, and according to former experience, were beyond the reach of medicine. While there are certain forms and stages more benefited by its use than others, it is clearly proved that there is no form or stage which entirely resists its influence. This is high praise of any individual remedy; and when our readers reflect that we are speaking of its efficacy in forms of disease hitherto the very opprobium of medicine, lying, most certainly, at the base of our want of success in the treatment of one-half the maladies which are submitted to us, whether as physicians or surgeons, they will, we fear, think less of the virtues of the remedy than of the extent of our credulity; but we must be content to undergo the penalty of the imputation until they follow our example by testing the matter for themselves.

The first question discussed by De Jongh is in reference to the value of the oil in the *scrofulous diathesis*, but upon which he affords us no very satisfactory information. He quotes Brefeld's statement, without comment, "that it completely eradicates the first trace, and removes the disposition, when it is not hereditary; which, when it is, it only alleviates to a certain extent: it also prevents the development and formation of disease." A little further on are quoted authorities holding an entirely different opinion to that of Brefeld. It is in general a delusion to imagine that *tendencies* to diseased action are remediable by drugs(*a*). If the circumstances of the case render it probable that inflammation will come on, no amount of mercurialization or blood-letting will prevent it. Every one has seen iritis commence in a salivated patient. We may assert that Indian hemp and prussic acid will never prevent the supervention of hydrophobia, no more than *coup sur coup* blood-letting has prevented that of pericarditis in rheumatism. It is true that this latter treatment has *an effect*, but precisely in the opposite direction to that indicated by Bouillaud. At present

(*a*) It must not be forgotten, however, that the oil is to be considered as something more than a mere drug. Unlike any other medicinal agent, it is also an important article of diet: it enables us to administer a fundamental element of the human body in an easily assimilable form, a consideration of great weight against the arguments in the text, in reference to its use as a prophylactic in the scrofulous diathesis.

our drug powers are limited to actual disease. We cannot put in motion our forces too soon after its commencement, but its *actual existence* is a necessary preliminary(*a*). Yet while such reasoning as this should strike the least reflecting, and though we shall not affirm that it is positively necessary to dose every fair-haired, blue-eyed, soft-skinned child with the cod-liver oil, because he happens to have such and such physical characteristics; we believe that Brefeld has not erred in stating, "that it removes the disposition when it is not hereditary." There is a proneness to the *generation* of the strumous diathesis, and to the characteristic products of that diathesis, after certain maladies,—typhus fever, and the exanthemata in general,—after long illnesses of any description, particularly if, during their treatment, mercury, blood-letting, and other powerful agents have been resorted to,—a proneness which, unless timely checked and carefully treated, leads more surely to the full development of true tubercular disease than the hereditary constitution itself. There is no fact more often forced upon our attention than the origin, by steps, for the most part easily traceable, of organic diseases, and more especially those dependent upon tubercular exudation, from the sources just named. It is in such conditions, so arising, that we think the cod liver oil of special benefit. Often have we seen it gradually and firmly rebuild the shattered frame, add new power to the decaying *vis vitæ*, and so obviate the forward progress of incurable organic degeneration. If, therefore, such cases are included in the general observation of Brefeld, we must express our hearty concurrence therewith.

The different forms of scrofula, meaning by that phrase actual diseased conditions, more or less dependent upon the strumous diathesis, have been well enumerated by Dr. Bennett, who properly observes that the fact of its appearing in different individuals in various forms, but being still essentially the same disease, accounts for the benefit derived from the oil in what may at first appear widely different maladies. This author states, that he has observed the oil to be least beneficial in external glandular swellings, more particularly if ulceration have not commenced. On the other hand, De Jongh believes "that it is a certain and undoubted remedy in this form; but in order to correct the scrofulous disposition, and to effect a perfect cure, it must be given for a long period;" and with this opinion

(*a*) Since these observations were written we have seen some good remarks in the same direction, by Mr. Critchett, in the London Medical Gazette for April 5th, p. 578.

our experience leads us entirely to concur. He recommends the external use to be conjoined with the internal administration.

Both Bennett and De Jongh adduce the strongest evidence in favour of the oil in "Atrophia Mesenterica." The former author states that it appears to be the only means of cure at present known; and several years afterwards(*a*), having enjoyed extensive opportunities in the interval (at the Royal Dispensary of Edinburgh) of seeing this malady among the poorest people in the city, expresses his belief that in no disease are the effects of the oil better marked. Brefeld(*b*) says:

"Cod liver oil cures this affection in all stages, when the powers of life have not been reduced too low. Care, however, should be taken that it should not be confounded with other forms of disease, as ulceration of the bowels, dropsy, &c. By its valuable aid it has often happened that I have been enabled to snatch from the yawning grave the little sufferer."

He strongly insists upon its external application, namely, the daily, often-repeated rubbing in on the tumid belly, being conjoined with its internal use. If the belly is not very sensitive, he recommends a camphorated liniment to be prepared, in which cod liver oil is to be substituted for common oil. In all parts of the treatise before us, this physician is reported to recommend its external use; and of its benefits so applied there is good reason to hold the highest estimate. Hitherto, in this country, it has not been used, in the manner indicated by Brefeld, to the extent it deserves. Of its virtues, when internally administered, in this fatal disease, there can be but one opinion among those who give it a fair trial. We have seen children in its earlier stages so quickly relieved of the bad symptoms,—so soon lose the old, withered aspect characteristic of the disease,—that we are forced to agree with the writers just named, in regard to its great powers. Many cases will resist its influence, many will be only temporarily relieved, another phase of the constitutional taint appearing, to baffle, decisively, all the efforts of the medical art; but has not all this occurred,—not often, but universally,—under any other treatment. All we wish our readers to understand is, that a fatal termination occurs immeasurably less frequently when the cod liver oil forms the chief element of the means employed, than under any other form of treatment that has ever been devised. Tabes mesenterica is, perhaps, more often an *acquired condition* than any other form of tubercular disease. To this opinion we have

(*a*) Appendix, p. 188. (*b*) De Jongh's Treatise, p. 98.

been led by its frequent easy traceability to the acknowledged causes of scrofula,—improper or insufficient food, damp houses, &c. &c.; and by our belief that, compared with other scrofulous maladies, it is far more frequent among the poorer than among the richer classes. Whether this consideration serves to account for the efficacy of this particular remedy or not, is not of so much importance as the fact itself; but the more or less tendency to a particular form of disease under certain fixed conditions, hereditary or otherwise, appears to us worthy of the most careful inquiry.

There is no form of struma(*a*) more difficult to manage, and which more generally runs its course almost uncontrolled by medicine, than rachitis. It is the opinion of De Jongh(*b*),—and this opinion is better supported by his cases than any other he has advanced,—that, whether it be at its commencement, or whether it be at its height, the cod liver oil will supersede every other means of cure in this affection, and will accomplish whatever can be expected or hoped for from any medicine. He quotes a Dutch physician, Pruys van der Hoeven, previously much prejudiced against the oil as being set up in opposition to steel whose virtues he had tested, but who, after experience of its value, confessed that he knew of no remedy against rachitis which at all approached it. But Brefeld's description of its operation, after treating upwards of a hundred cases of rachitis with the oil, is so excellent that we shall give it entire from De Jongh's Treatise:

"The healing virtue of the cod liver oil, in this form of disease, is as incredible as it is unlimited in its effects. Even in the very extremity of life, where the patient appears to be sinking, and death is inevitable, it affords relief as a matter of certainty. I know nothing to controvert this, except an intervening attack of acute fever, and the termination of life,—the death-struggle itself. It moderates slow fever and diarrhœa as well as the other symptoms of rachitis, which, one after the other, are gradually dispersed. It improves digestion and the consequent nourishment of the body, the motions becoming regular, and of a darker colour; the tumid belly softens, and diminishes in size as the emaciated extremities begin to recover their rotundity. The old features become again natural and childish; the skin moist and browner; the powers of life are restored; the eyes are again full of life and brightness; the slow fever disappears; the childish gaiety establishes itself again, with a return of healthy, sound sleep, and removal of that anxious

(*a*) We think Dr. Bennett is borne out by experience in saying that rachitis is not always a scrofulous disease. See p. 101.

(*b*) Page 99.

nightly starting and shrieking, which render the night so wretched to the infant; with the increasing strength, the desire and ability to stand and to walk return. The unnatural state of the bones,—both in form and strength, by degrees is corrected; the discoloured, shaking teeth become firm and improved in appearance; the bones lose their flexibility, and the epiphyses are no longer enlarged; the deformity does not increase, but, on the contrary, is more or less repaired by the powers of nature and increasing growth, although there are some remains which are not entirely effaced. As an anthelmintic, the cod liver oil is a most excellent adjuvant, by which the nests of worms found in the tumid belly are dislodged, both mildly and effectually. The internal use of the oil is in itself sufficient to effect a cure in rachitis, in from three to four months, if you allow somewhat more for the repair of the newly formed bones. Cleanliness, regular diet, and regimen, as well as warm baths, will expedite the cure; while, on the contrary, unfavourable circumstances, however slight, will equally retard it."

Want of space alone prevents us from giving the admirable description of the effects of the oil in this disease by Dr. Steinhaeuser, of Heidelberg, as quoted in Dr. Bennett's Treatise; but its exact agreement with that of Brefeld renders this to be the less regretted. Considering the evidence of its remarkable effects in rachitis, adduced by so many competent observers, it is not easy to resist his conclusion: "that it has a powerful and deep influence on the human economy in general, and the osseous tissue in particular"(*a*). With a view to treatment, Dr. Bennett divides rachitis into two forms, which he denominates, respectively, simplex and scrofulosa. In the first form the children are strong, fat, and have a healthy external appearance, only the anterior fontanelle remains open; they have few teeth, and sometimes the epiphyses of the long bones are thickened. In the second form, in conjunction with the latter symptoms are more or less deformity of the osseous system generally, there is always a cachectic constitution, the child appearing to be improperly nourished, and presenting all the appearances of scrofula. In the first form, Dr. Bennett believes the cod liver oil is inert, but in the second its beneficial operation is most striking. This distinction is probably well founded, and of still wider application. Apart altogether from speculations as to the *modus operandi* of the oil, experience appears to favour the idea that its benefits are the greatest when there is a palpable deficiency in assimilating power, as evinced by emaciation and general cachexia.

In other affections of the osseous system, particularly in

(*a*) Page 103.

scrofulous caries, the oil has been found of the utmost service, obviating, apparently, the necessity for amputation in the worst cases. We must refer our readers to the individual treatises for copious information upon this point. Surgeons are now pretty well agreed that caries of bones is not susceptible of cure by any local measures. We believe the application of blisters and moxæ, in quick succession, in scrofulous caries of the heads of bones, to be the best mode that can be devised to bring the patient quickly to the operating theatre. These modes of attacking the disease are founded upon an altogether erroneous pathology. They have not even the same apology for their use as the physician for the application—very moderate application indeed—of blisters to the intercurrent pleurisies of tubercular lungs; for in the former case the surgeon can command the best of antiphlogistics, namely, *rest.* We believe successful treatment can only be obtained here by the most careful general measures, directed to the improvement of the assimilating processes. These are, indeed, the very cases which we should, *a priori*, have imagined would be benefited by the oil, granting any virtues at all to it. Experience amply bears out this opinion. In scrofulous caries of the vertebræ, the mightiest weapons in the surgeon's armoury are weak in comparison to the combined effects of rest and cod liver oil.

There is no form of scrofulous disease which has not been treated by the oil, externally or internally used, or both combined, and in no form has it been proved to be entirely inefficacious. In the treatises before us we find that divers strumous eruptions, or, perhaps more properly, eruptions taking place in strumous constitutions, have not resisted its magical(*a*) powers. We find mentioned impetigo, eczema, some scaly eruptions, and even tinea favosa, as having been quickly and *safely* cured by it. We have used it in several severe cases of the crusta lactea of young children with the most marked benefit. In many of the cases reported it was applied externally, and was considered, when thus applied, very much to expedite the cure. We have had no experience of its external use in the other eruptions, chiefly, it must be confessed, because we have found so much benefit from weak alkaline lotions, when we have thought a local application necessary. There are some stages of these eruptions that we should have imagined likely to be injured by the oil, merely considered as an unctuous application.

(*a*) We are using here but an often-repeated epithet in the records of the reporters of its effects.

Strumous corneitis, granular lids, scrofulous ulcers, malacosteon, and various other phases of scrofula, have been submitted by different physicians to the treatment with the cod liver oil; and we repeat that in different degrees all have been susceptible of its remedial powers; but for evidence upon these points we must again refer our readers to the treatises themselves. There is one form of struma which we must not so pass over, we mean "phthisis pulmonalis." The evidence of the value of the oil in this disease has recently so rapidly accumulated, that the attention of the profession seems almost exclusively fixed upon it as an *anti-phthisical* agent. We deeply regret this circumstance, being strongly convinced that already an exaggerated estimate is formed of its powers in this disease, great as they really are; and being equally strongly persuaded that, if found to disappoint too sanguine expectations in this instance, the profession will soon follow the steps indicated at the commencement of this article, and deny *any merits* to the remedy in the forms of disease we have just discussed, in which its value is unimpeachable.

The evidence offered by De Jongh, as regards the effects of the oil in phthisis pulmonalis, is very unsatisfactory; in fact, it can only be considered as giving a general confirmation of the observations of other authors. He quotes a number of authorities, all certainly tending the same way in reference to its value; but, from all we find related of the cases, it is doubtful if they were really cases of genuine tubercular disease. He appears to have somewhat distrusted this evidence himself, for he considered it worth while to collect the opinions of some of the most celebrated Dutch physicians, with whose answers he favours us. We have no higher praise to give *their* statements; they cannot be allowed as *actual proof* of the good effects of the oil. One case only, given by Schröder van der Kolk, is so reported as to leave but little doubt that it was one of genuine tubercular phthisis. An observation, by Suermann, we think is useful to extract, as it states one merit of the oil, of a negative character, that should not be lost sight of:

> "Independent of the real value which this remedy possesses, it has been the means of supplanting those of a more dangerous nature, and of preventing the public from using others, which were both new and contra-indicated in phthisis."

We thought we were arriving at some satisfactory details when we commenced the perusal of Haller's experience in the Imperial House of Correction, in the lower Austrian provinces. This physician is reported to have given the oil in seven cases

of tubercular affections of the lungs. But when, upon reading the *post mortem* examination of one of these cases, we found it stated that there was *total destruction of the lungs*, we began to doubt whether possibly his sense of hearing might not have been as imperfect as his visual powers. It is remarkable that De Jongh, among his eighteen fully recorded cases, gives no example of phthisis treated by the oil. Upon turning to the appendix, by Dr. Carey, the want of sound evidence is not satisfied. The first case of "phthisis" was clearly at its origin, one of pleuritis of the left side; and the physical signs, in a subsequent stage of the disease, are given so loosely that no definite conclusion can be arrived at. Dr. Carey should have known that it was of the first importance to state how much, *if any*, of the right side,—the respiration on this side being described as puerile and bronchial,—*was dull on percussion.* The concluding observation, that "considerable change has taken place in the right side, the respiratory sounds assuming a more healthy character, the left lung remaining impervious to air," only makes the whole case wear a still more doubtful aspect. The second case is termed "incipient tubercular phthisis." Here the history strongly favours the opinion advanced by Dr. Carey. But, when we find the following most ludicrous account of the physical signs,—" chest was dull on percussion; respiration highly puerile; heart sounds audible over the whole precordial region,"—we pause ere we take his authority upon a matter of such grave moment. We make these strictures with great reluctance, for Dr. Carey deserves well of the profession for the translation of De Jongh's treatise. From this very appendix we entertain a very favourable opinion of his abilities, though we are compelled to mark his deficiencies in this all-important point.

Dr. Bennett's section on phthisis deserves the closest attention. It was considered unsatisfactory by contemporary critics, but upon what foundation we are at a loss to understand. He sets out with the observation that we possess ample proof that tuberculous cavities in the lungs are susceptible of cicatrization(*a*) and makes the inquiry, why may not the remedy, which has been found capable of curing tubercle in the bones and mesenteric glands, operate also favourably when tubercular deposition has taken place in the lungs? He proceeds to quote some German authors,—the same, for the most part, as those quoted

(*a*) See on this point an essay by Dr. Bennett, in the Edinburgh Medical and Surgical Journal, April, 1845, entitled, " On the frequent spontaneous Cure of Pulmonary Consumption, and the Indications furnished by Pathology for its rational Treatment."

by De Jongh in favour of the oil. Asinus appears to have cured with the oil a man who presented the symptoms of consumption, with an excavation in the apex of the right lung, *as proved by the stethoscope.* Dr. Wolf, of Berlin, informed Dr. Bennett that he had found the oil of great service in the second stage, but neither he nor Professor Schönlein had noticed any benefit in the third stage, where caverns exist in the lungs, and extreme emaciation, hectic, and prostration are present.

The first of Dr. Bennett's cases was one of "hemoptysis,—irritating cough of four years' standing,—hectic fever." The subject of these symptoms was twenty-six years old, of strumous habit, and suffered profuse sweatings, with occasional returns of hemoptysis, for four years. In a few months after commencing the use of the cod liver oil, the cough and hemoptysis left him, and his strength returned. From the want of physical signs, this, were it an isolated case, would evidently be of little value, as Dr. Bennett himself remarks. The next case is more satisfactory. A carpenter, aged 28, of a scrofulous family, was seized with a severe attack of pneumonia, attended with *violent spitting of blood.* Under treatment the inflammatory symptoms and hemoptysis disappeared, but the cough and a certain amount of feverishness remained. After several weeks, great wasting came on, attended with sweats, considerable cough, some degree of œdema of the feet, and profuse expectoration. Percussion discovered nothing; auscultation gave evidence of mucous and submucous râles in the superior third of both lungs; and in the right fossa supra-spinata the local resonance was much louder than in the left. There were well-marked hectic fever, profuse sweatings, and frequent teasing cough, with roughness in the larynx. All the ordinary remedies were tried, but the digestive functions became deranged, and his whole condition so bad, that it seemed evident that a fatal termination was drawing near. He was now given the cod liver oil, in doses of two ounces daily, afterwards increased to four ounces. An amendment soon became perceptible; all the symptoms gradually disappeared, and in three months after taking the remedy he was perfectly restored to health.

The third case is one of advanced phthisis, occurring in a boy seventeen years of age, with hereditary predisposition. A large vomica was clearly made out under the right clavicle. There were extreme emaciation, profuse night sweatings, want of appetite, and the other symptoms common in this advanced stage of the disease. He was ordered to take the cod liver oil three times daily, in table-spoonful doses. His appetite began to improve; his strength increased; the night sweatings disap-

peared; so that in eight weeks the patient seemed to be quite another individual from what he was when he entered the hospital. He now appeared to have received from the oil all the benefits it was capable of bestowing. At this time every dose occasioned nausea, and took from him all appetite, so that it was discontinued. After two weeks it was again given in smaller doses, but without producing its former good effects, and the patient gradually fell into the state in which he first entered the hospital. Dr. Bennett well remarks that, "had the physician been acquainted with the necessity of not overloading the system, attending to the state of the digestion, and, when this appeared to be deranged, of giving other tonics, he might have ultimately recovered." This observation contains a valuable truth. We have ourselves generally desisted from the administration of the oil, when, after taking it for some weeks without any discomfort, the patient begins to complain of nausea or loss of appetite. No assumed benefit of the oil can counterbalance the injury caused by the production of these symptoms. When they have been subdued,—not very easy to be compassed it must be confessed,—we have usually found no great difficulty in its re-introduction into the system.

The fourth case is that of a servant, aged 35, of a scrofulous constitution. The expectoration was bloody and purulent; sweating profuse; considerable cough. All the symptoms of hectic fever followed one after another. She was also suffering from caries of the olecranon process. Auscultation detected cavernous respiration under the right clavicle, with dulness on percussion. The oil, when first given, produced vomiting, on account of which it was suspended for a short time, but it was re-prescribed and steadily persevered in. The sweating disappeared; the cough and expectoration were diminished; the cachectic appearance of the patient much improved, and she daily regained strength; the discharge from the ulcer on the elbow became less and less, and finally it healed, the cicatrix being densely united to the bone. Some eight or nine months afterwards Dr. Bennett examined this patient, and found that though the elbow-joint was permanently bent at an obtuse angle, she could perform rotation and supination of the fore-arm. He was unable to detect, either by percussion or auscultation, anything abnormal in the chest. This will be admitted to be a highly instructive case, and proves that the oil acts upon the local lesion, whether of the bones or of the lungs, through its operation upon the general pathological state of the system.

The subject of the fifth case is a boy, of a highly scrofulous constitution, who at the age of seven was attacked with marked

symptoms of phthisis. The oil was administered for twelve months; he lost all cough, and, towards the end of his eleventh year, enjoyed good health. Six months afterwards he was attacked with pleuritis of the left side. At this time auscultation detected at the summit of the left lung cavernous respiration, with perfect pectoriloquy; no cavernous rattle. In the course of some weeks another attack of pleuritis came on, followed by hypertrophy of the heart and dropsy. Great exhaustion supervened, and death followed. In the left lung, near the summit, was a cavity, about the size of a walnut, quite empty. Its inner surface was dry, and of a dirty brownish colour, somewhat resembling that of a smoked ham. Its walls were not lined by any adventitious membrane, but were composed of the substance of the lung in a condensed and considerably indurated state. Neither in the neighbourhood of this cavern, nor in any other part of the left lung, were any traces of tubercle to be found. The whole of the right lung was studded with tubercles, from the size of a pea to that of a bean. Dr. Bennett, from all the facts of the case, concludes that the cavity, discovered in a healing state in the left lung, belonged to the phthisical condition which existed eighteen months before his death; that the disposition, which this morbid change usually possesses, of advancing to a fatal termination, was most probably checked by the administration of the oil; but that a continued exposure to the exciting causes induced a return of the disease, which attacked the opposite lung, and which terminated in death.

That these five cases offer the strongest support to the opinion of the great value of the oil in phthisis pulmonalis, will only be questioned by those who *will* see nothing proved by their predecessors in medical inquiries. Yet the author of these cases was not led into error as to the *limits* of the value of the remedy. His remarks, indeed, upon this point, so clearly embody our own ideas that we shall extract them at length, premising only that they afford proof that Dr. Bennett did not consider he was recommending an infallible panacea when he wrote his treatise:

"No doubt great caution is necessary, not only in admitting the curability of this disease by any therapeutic means, but also by this remedy in particular. All that is here contended for, however, is simply that enough has been stated to warrant its further trial by the profession. Nothing is further from my intention than exciting exaggerated ideas of the benefits of this substance, either in phthisis pulmonalis or in other forms of scrofulous disease. Nothing is so fatal to the introduction of a new remedy as this; and truth compels me to state that I have seen other cases where the administra-

tion of the oil has only produced slight benefit, or none at all. But there does not exist any one remedy which is infallible, and much less is it to be expected that in the disease under discussion, which has been universally allowed to be one of the opprobria medicinæ, invariable success can follow the employment of any remedy whatever. From such a rash conclusion, a knowledge of the present state of medicine must guard every enlightened practitioner. If, however, it can be shown, as I have endeavoured to do, that even a few cases may be snatched from the almost certain fatal termination to which they are at present allowed to proceed, the discussion of this subject will not have been altogether useless"(*a*).

Unquestionably the most important recent addition to our knowledge of the value of the oil in phthisis is the paper of Dr. Williams, to which we have already alluded. He has given us eleven well-reported cases, selected from a great number proving the same fact, in which the oil was administered with indubitable benefit. In some of these cases the general health became perfectly restored, while the further progress of disease in the lung was arrested. In others the benefit was well-marked, but temporary. He remarks that out of 234 cases, the oil disagreed, and was discontinued, in only nine instances. In nineteen, although taken, it appeared to do no good, whilst in the large proportion of 206 out of 234; its use was followed by marked and unequivocal improvement. Want of space compels us to refer our readers to the paper itself for details of the cases. They will find also, in Dr. Turnbull's paper, several instances of the great benefit of the oil, whence that physician has drawn the conclusion, that phthisis is not an altogether incurable affection. His deduction, as we have seen, is not new, and his cases, were they the only ones on record, would tend, though probably only to a very moderate degree, to its establishment. We would not disparage either the merits or the industry of the author of this paper; but we are constrained to mention the looseness with which he has reported the physical diagnosis of his cases. At this stage of the inquiry, it is a capital defect, not to be atoned for by excellencies of any description.

What we want is perfectly obvious: it is an accurate record of cases where the disease was made out by a rigid physical diagnosis, and *noted at the time the oil was first administered.* At frequent intervals in the course of years, both during and

(*a*) Some admirable remarks, tending to the same conclusion, will be found in the most recent contribution of Dr. Bennett upon the subject of the treatment of phthisis, in the March Number of the Edinburgh Monthly Journal for this year.

after its administration, these cases should be subjected to a careful physical examination, and the progress, whether towards cure or the contrary, fully reported upon, and made known to the profession.

The great merit of Dr. Williams' paper consists in, that he has given us cases where the disease was fairly made out, and that he has supplied us with data towards the formation of an accurate conclusion as to the real merits of the oil, by recording the results of his examinations subsequent to its first administration. When we seek for information upon the kind and degree of improvement effected, we find a great deal that is excellent; in truth, we do not think that Dr. Williams has stated anything concerning the effects upon the local lesion or the general health that is not fully borne out by the experience of all who have tried the remedy. This part of the subject has been briefly handled by Dr. Bennett in the Appendix to his Treatise, published in 1848; briefly, it is true, but with such singular closeness to the actual facts, in both the points of view just named, that nothing was reserved for Dr. Williams to discover. We assert, without the smallest hesitation, that there is not even the shadow of a *fact* recorded in the paper before us, that had not been *foreshadowed* by the Edinburgh Professor. We have certainly fallen upon some reasoning here, of which we had no previous intimation, such as—

"If my views of the chemical nature of suppuration, that it consists of a further oxydation of the exudation corpuscle, be correct, then it is quite intelligible that the presence of so highly combustible a material as oil must check this process of oxydation, and thus prevent the degeneration of the corpuscles into the aplastic state of pus-globules"(*a*).

But if this be not simply ridiculous, when we consider the compound nature of the cell, it is so perfectly gratuitous as an hypothesis, so entirely unnecessary as an explanation of the effects of the oil, that we have only to say of this and the like reasonings, that it is a source of congratulation to us that they are Dr. Williams',—that they have no other paternity, at least that has been yet discovered. Those of our readers who wish further information upon the effects of the oil in phthisis, will probably, from its being so easily accessible, consult the paper of Dr. Williams: for this reason, as well as on account of the brevity yet comprehensiveness with which Dr. Bennett has described its effects, we prefer to quote the Appendix of this author:

(*a*) Page 15.

"The effect of the oil in many cases is very striking, and is well seen in hospital and dispensary practice. Individuals presenting the emaciation, profuse sweats(*a*), constant cough and expectoration, as most prominent symptoms, with a degree of weakness that prevents their standing alone, after a few weeks' use of it are enabled to get up with ease, and walk about, with a visible improvement in their general health, and an increased amount of flesh. The physical signs of the disease may continue unaffected for some time, but if the treatment be continued, the moist gurgling râles are exchanged for dry blowing sounds, which become more and more persistent; pectoriloquy is merged into bronchophony, the respiration is easier, and a check is evidently given to the ulcerative process, and the formation of purulent matter in the air-passages. In this state patients often feel themselves so well that they insist on leaving the hospital. I have frequently found it impossible to prevail on such persons to continue the treatment, and the consequence is, that again returning to their often unhealthy employment and bad diet, and exposed to the other causes favourable to the production of the disease, the distressing symptoms again recur. Several cases, with one or more caverns in the lung, have in this manner returned to the infirmary from four to seven or eight times during the last six years, and on each occasion have gone out, in their own opinion, perfectly cured. Notwithstanding the difficulties which have presented themselves in bringing about a complete cure of the disease, I have succeeded in several cases in ascertaining that the caverns have completely healed up, every symptom and physical sign indicating their presence has disappeared, and there has remained only slight dulness on percussion, and increased vocal resonance, as a proof of the puckering and induration of the pulmonary parenchyma attendant on the cicatrix. I do not say that this has been entirely owing to cod liver oil; but it has seemed to me probable that if this substance had not been given at the commencement of the treatment, the constitution would never have rallied from the state of exhaustion and depression under which it laboured."

We caution those perusing for the first time the accounts of the remedial properties of the oil, against the notion that it is used to the exclusion of all other remedies. Symptoms, as they arise, must, of course, be treated according to received rational principles. It is important in some cases to keep up a moderate counter-irritation, to effect which there is probably nothing so advantageous as the stimulating liniment composed of strong acetic acid, with a little acetum cantharidis, as recommended by Dr. Williams.

(*a*) In another place he observes that "no remedy has so rapidly restored the exhausted powers of the patients, improved the nutritive functions generally, stopped or diminished the emaciation, checked the perspiration, and quieted the cough and expectoration."

Other means besides counter-irritation will be found of use to relieve the varied symptoms that may occur during the administration of the oil; but, as Dr. Williams well observes, they are to be regarded now chiefly as subsidiary means, and the more likely to be useful in proportion as they facilitate the exhibition or continuance of this superior agent.

There has been a great discrepancy of opinion as to the stage of phthisis when the oil is most serviceable; the majority of the authorities quoted by De Jongh holding that it is absolutely useless when hectic fever, emaciation, and sweating, are present; an opinion Wolf and Schönlein (as quoted by Bennett) seem to share; while others, among whom is Dr. Williams, believe the most striking instances of the beneficial operation of cod liver oil in phthisis are to be found in cases in the third stage, where these symptoms have supervened. That the oil does produce the most extraordinary and rapid improvement in such cases we have had very satisfactory experience. If it did nothing more than check the perspirations and profuse expectoration of this stage, it would well deserve the high eulogium of Dr. Williams, that, "even as a tardative or palliative in phthisis, it ranks far above any agent hitherto recommended." But we hardly think it necessary to argue that, if it produces a retardation or complete cessation of exudation in the lung, and decisive improvement in the general symptoms accompanying this stage, it must produce still greater benefits in the earlier stages, though not so rapidly and obviously manifested. We fortunately possess a document in proof of this point, which no one can gainsay, namely, the valuable Report of the Consumption Hospital at Brompton(*a*). From this it appears that arrestment of the disease was pretty directly proportioned to the earliness of the stage when the use of the oil was commenced. Taking a general view of this point, we may state that, while we must always expect to obtain more permanent relief the earlier the oil is administered, the best evidence at present (Bennett and Williams), should encourage us to hope even for marked and decisive benefit in the advanced stages, although attended with the most formidable symptoms.

The opinion so frequently advanced by those who have given us their experience of the oil, that it is contra-indicated during the presence of diarrhœa, requires certainly to be accepted with considerable modification. Dr. Williams has not found "colliquative diarrhœa" incompatible with its beneficial operation. The subject of his first case laboured under this

(*a*) See the Analysis of this Report in our last Number.

symptom; but it did not prevent the administration of the oil, or the rapid production of its remedial effects. The first time Dr. Williams saw the patient, he prescribed the oil simultaneously with a pill containing sulphate of copper, morphia, and creasote, to check the diarrhœa. When he was next consulted, although the oil was being taken in *six drachm doses* three times a day, the diarrhœa was not merely subdued, but it was even considered necessary to exhibit a mercurial aperient. Dr. Bennett places among the contra-indications to its use, diarrhœa "dependent on disease in the intestinal walls," and the German translator of De Jongh's Treatise, makes a distinction nearly of the same kind. After stating that some have regarded the cod liver oil as having a constipating effect, and others as an aperient, he remarks:

"That when the intestinal canal is quite healthy, it promotes the evacuations in proportion as it improves the appetite and the digestion; in chronic diarrhœa, on this account, it will always act favourably, whilst it decidedly increases diarrhœa arising from irritation(*a*). Should diarrhœa come on during the use of the oil, it should be suspended, in every case, for a considerable time."

These observations merit the notice of any one about to administer this remedy, for no symptom is more apt to embarrass the physician in the last stages of phthisis than the one we are discussing. We entirely concur with the experience of Dr. Williams on this point. The presence of diarrhœa should never be allowed to prevent us from giving the oil a trial, in small doses at first, and applying carefully the remedies required by the state of the intestinal canal, among which we give the chief place to bismuth, conium, pernitrate of iron, and, above all, opium. If the diarrhœa persist in spite of our efforts to check it, then we should advise the oil to be temporarily suspended. If this symptom appear for the first time after the oil has been commenced, and during its administration, we agree with the German translator of De Jongh, its withdrawal becomes unavoidable. Under these latter circumstances we have often attempted to persevere with the remedy, but in the great majority of cases without success. While we urge the most careful attention to this symptom, we wish equally to be understood as by no means counselling the too ready abandonment of the great remedy. If the physician becomes frightened at the supervention of this or that symptom, he will never suc-

(*a*) Dr. Bennett gives some sound practical remarks upon this point in his section "on the action of the oil on the human economy." See particularly p. 45.

ceed in benefiting his patient, either by this or by any other means. And here we would give the same counsel that is applicable to the whole range of our art: if a remedy of great and acknowledged powers be strongly indicated in a given malady, let it be administered, *malgrè* some opposing indications, even though they may appear to be caused by the remedy. We may check *these*, perhaps, almost infinitely; but we may possess but this one weapon against the production of organic incurable degeneration, against the tendency, possibly, to death. With such prospects, the physician must not fly in weak fear from drug to drug; he must not *wait*, that most fashionable error of modern medicine.

We have had abundant evidence, that in strumous children with tumid belly and irritable bowels, the oil restrains the undue action of the latter, while the colour of the evacuations is manifestly improved, as stated by Dr. Carey(*a*) in his Appendix. This author affirms that in some constitutions it produces diarrhœa, and refers to the custom in Holland of restraining it by acorn coffee, prepared of the same strength as ordinary coffee, and given two or three times a day.

Hemoptysis is another symptom which seems to be pretty generally considered as contra-indicating the use of the oil, but about which there is no very definite information in the Treatises before us. Our own rule has been, if a patient presents himself suffering *at the time* from decided pulmonary hemorrhage, to have recourse in the first instance to treatment calculated to check it, and, immediately the hemorrhage subsides, or is diminished to a marked degree, we commence the use of the oil, which we never think it necessary to withhold, even if the patient frequently during its administration complains of having streaks of blood in his sputa. To him who withholds it on this account, it will ever be a dead letter; we should advise him not to try it at all, lest by his own weakness the oil should be brought into disrepute. Our remarks concerning diarrhœa hold good here to a greater degree. The symptoms may be treated and checked, yet the oil be persisted in. We do not deny that cases every now and then occur, where the urgency of the hemorrhage renders it indispensable that the oil should be suspended, but these are the exceptions. In the great majority of instances this symptom need not interfere with its administration.

All authors agree, that when there is a disposition to inflammation this agent should not be used. Of course this process

(*a*) Page 166.

must be checked, as in all other cases, by the received anti-inflammatory means, and no one has pretended that the cod liver oil is, in the strict sense of the term, *an antiphlogistic.* That by adding vigour to the frame, and by its wonderful power of improving the chylopoietic and general assimilating processes, it does truly countervail the tendency to the development of inflammation, will not be doubted by those who appreciate the aptness to its production engendered in a cachetic habit. But that its employment induces pneumonia, as lately supposed, and so publicly stated by Dr. Benson of this city, we entirely discredit. When we consider, as Dr. Bennett has recently urged(*a*), that nothing is more common than to find after death more or less pneumonic condensation around tubercles; when too we reflect upon the difficulties in diagnosing during life, under the circumstances, a *genuine* pneumonia, which we presume Dr. Benson means, if he means anything; we feel called upon to express our regret that this physician should have made an observation so likely to prejudice the profession against a valuable remedy, without bringing forward irrefragable proofs of his surmises, which, we would suggest, are entirely misplaced in such questions. This " crying of the wolf " we earnestly deprecate, as a source of infinite injury to the progress of medicine.

It is impossible to withhold a partial assent to the opinions of some of the authors alluded to, in reference to diarrhœa and hemorrhage as contra-indicating the use of the oil; but when the German translator, so often mentioned, tells us of a "disposition to indigestion" as a valid reason for its non-administration, we are irresistibly brought to the conclusion, where his exceptions are so numerous, that his rule of giving it must be itself the exception. We shall not seriously argue with the learned translator, that this idea is a perfect delusion, but only state, we hope *not* for the information of readers, that as phthisis begins in indigestion, so throughout its whole progress indigestion occurs to a more or less marked degree; and that, " as the nutritive properties of the blood are entirely dependant on a proper assimilation of food, and as this assimilation must be interfered with in the morbid conditions of the alimentary canal, the continuance of such conditions necessarily induces an impoverished state of the blood and imperfect growth of the tissues"(*b*), if the cod liver oil does not relieve this primary evil, if it does not conduce to, rather than interfere with this " proper assimilation of food,"

(*a*) See his paper on the treatment of phthisis pulmonalis in the March Number of the Edinburgh Monthly Journal, p. 239.

(*b*) See Dr. Bennett in the same paper, p. 232.

it must at once be fairly allowed that the ascribing any therapeutic efficacy to it is nothing less than a gross blunder. If marked pain in the stomach, attended with nausea, furred tongue, and loss of appetite, come on during the time of its exhibition, the judicious practitioner will resort to the proper modes of checking these symptoms; but, in concluding our observations on this and other supposed contra-indicants, we cannot do better than quote some remarks from Dr. Bennett's Appendix:

"Most cases of phthisis pulmonalis, especially in the advanced stage, are attended with more or less dyspepsia, which renders the stomach irritable, causes total loss of appetite, and is often the cause that prevents nourishment from being taken. In many instances there is no difficulty in employing the oil under these circumstances, but in others it cannot be retained on the stomach. It will then be necessary to calm the irritability of the organ, and the best remedy for this purpose, according to my experience, is naphtha. It is to the power this substance possesses of preventing vomiting, and thereby allowing nourishment to be retained, that I attribute the advantages which have attended its use in the practice of Dr. J. Hastings and others."

Regarding the dose of cod liver oil authors indulge in considerable latitude. Klencke directs, as the smallest dose, to begin with three table-spoonfuls of the oil daily, which quantity may be increased to twenty per diem, or until the patient comes to live almost entirely upon it. The bare fact that oil alone does not afford nourishment will be sufficient answer to the opinions and practice of this physician. His belief that oil is converted into albumen in the animal economy gives a basis to his practice; but this is an error which the date of his treatise (1842) only partially justifies. Dr. Bennett, in his latest paper, gives a table-spoonful three times a day, as the common dose for an adult, which may often be increased to four, or even six, with advantage; but that when the stomach is irritable, the dose to commence with should be a tea or dessert-spoonful. In almost all of Dr. Williams' cases, when the dose is mentioned, it is a table-spoonful three times daily. In one case, the first, the patient during a part of the time, took six drachms, thrice a day. This physician appears to us to have exhibited it with great care and discretion, regulating it according to symptoms in the most judicious manner. We have rarely given it in larger doses than half an ounce, twice or three times a day, and this dose has been the exception. Our rule has been to administer but half this quantity; but we shall not pretend that had we given it in larger quantity we might not have obtained greater benefits, good reason as we have to be

satisfied with the results of the latter dose. In young children we should say that a tea-spoonful is a sufficient dose. Certain we are that there is a limit beyond which it is injurious to pass in the exhibition of this agent: it is not an indifferent remedy to be applied indiscriminately and indiscreetly, but with due regard to all the circumstances of the case.

We have very little to say upon the modes of getting rid as far as possible of the taste of the oil. We prefer giving it alone, and those who yield it a trial soon come to the same conclusion. They who administer it in the way of emulsion, mixture, &c., only increase the bulk, without effecting the object they desire. Ever since we first commenced its use we have ordered it to be swallowed pure, and washed down with a draught of milk or peppermint water, two remedies we see strongly praised by Dr. Andrew Wood of Edinburgh(*a*). The compound infusion, with a little tincture, and syrup of orange-peel, and sometimes the addition of a few drops of nitric acid, as recommended by Dr. Williams, would answer the purpose exceedingly well, and be, doubtless, very agreeable to the palate. To prevent nausea, and shorten the duration of the very disagreeable eructations recalling the taste of the oil, it is important to give it within an hour, or at most two (Williams) after the principal meals. With the same view we have often given it during meals with satisfactory results.

We have observed one curious effect of the oil that we cannot forbear noticing. During the past year we saw it administered to a girl about twenty years of age, for curvature of the lower part of the spine, accompanied with pains in the lower extremities. After taking the remedy for some time, she complained suddenly of thirst, heat of skin, and general feverishness. These symptoms were followed by an uniform, intensely red rash over the whole surface of the body, precisely like scarlatina, which disease, indeed, we supposed it to be. Upon the suspension of the oil the eruption rapidly disappeared. After two or three weeks it was again administered, when the same symptoms, but less marked, supervened. After an interval it was persevered in without their re-appearance. About the same time two patients complained to us of the same rash coming on after commencing the use of the oil. We were not aware that this had been previously noticed; but we find Dr. Bennett(*b*) stating that Dr. A. Wood informed him, some years ago, that he had observed in a few cases a bright red eruption, resembling that of scarlet fever, come on about the fourth day of its

(*a*) Dr. Bennett's treatise, p. 176. (*b*) Page 182.

use; which, however, disappeared on intermitting the medicine for a little. The former author had never observed this symptom to follow its employment. At the conclusion of his treatise, Dr. Wood writes to the author that

"Since the date of his former communication he had occasionally met with the scarlet rash, but in a very modified form, and, he thinks, almost always in males. The rash, indeed, is very striking, resembling most completely that of scarlatina, though more uniformly diffused."

One of the cases we have seen occurred, as just described, in a girl(*a*).

The length to which this article has already extended forbids our entering otherwise than briefly into the consideration of the *modus operandi* of the oil; but we feel it to be impossible altogether to pass over this part of the subject. Dr. Bennett's views, even as published in the first edition of his treatise, deserve the most attentive consideration, and we regret that we cannot find room for even an abstract of them, the more especially as in an early part of this article we stated our belief that the theory he proposes must form the basis of a rational explanation of its action.

In the appendix(*b*) to his treatise, published some years afterwards, Dr. Bennett affirms his belief, after considerable reflection and observation, that the therapeutic action of cod liver oil is dependent essentially on its being a fatty matter, perhaps more easily assimilated to the economy than any other kind of fat; and gives his opinion that the views of Ascherson are fundamentally correct, with the difference that, instead of oil and albumen uniting to form elementary cells, they only produce elementary molecules and granules, from which nuclei and cells are formed. These views are reiterated in his recent paper in the Edinburgh Monthly Journal, from whence it appears quite conclusive that, so early as 1847, this author had given up the idea of the efficacy of the iodine contained in the oil, to which, at the first publication of his Treatise, he had ascribed a portion of its therapeutic powers.

Dr. Williams believes that the oil itself proves serviceable in supplying the fat molecules, which appear to be essential to healthy nutrition, as forming the nucleoli of the primary cells or rudiments of tissues. This author refers to the second edi-

(*a*) De Jongh quotes Haller, an Austrian physician, as having noticed, in some cases, the oil to be followed by a *papular* eruption, which he considers to have been *critical*, p. 117.

(*b*) Page 183.

tion of his Principles of Medicine(*a*) for proof that he has given a different explanation to that of Dr. Bennett of the chief salutary action of the cod liver oil; his explanation being, not that it supplies fat where it is wanting, but that it supplies fat of a better kind, more fluid, more divisible, and more capable of being absorbed into, and of pervading, the structures of the body. In a note, he becomes very angry with a reviewer for asserting that his explanation, contained in the work alluded to, is a plagiarism, as being that previously given by Dr. Bennett. We can understand most fully the anger of Dr. Williams, for the truth is, that this is precisely the imputation which is only resented when it is well founded; a fact of which we have many living illustrations. Really Dr. Williams should have long ere this become hardened to an accusation of this nature, and not have so much, and so soon again, forgotten himself as to talk of the "gross misunderstandings," and "spirit of personal jealousy" of a reviewer who unmasked his discoveries. That in the appendix, and short paper on the relation of oil and albumen, Dr. Bennett has completely anticipated the explanation just given, will appear too obvious to need pointing out. Dr. Williams studiously avoids reference to these two papers, because they contain a correction of the assertion of Ascherson, adopted by Bennett, that the union of oil and albumen forms cells themselves; whereas, as is therein clearly shown, their union constitutes the primary molecules *from* which nuclei and cells are formed. If the "better fat" of Dr. Williams means anything, it means "the fat more easily assimilated to the animal economy" of Dr. Bennett. The former author asserts that the oil does not supply fat where it is wanting, because tuberculous deposits are not deficient in the fatty element; forgetting that when, in a pathological condition, the digestive powers are enfeebled, the due assimilation of fat does not take place; and, as urged by Dr. Bennett, in giving an animal oil ready-made, we save the alimentary organs the trouble, as it were, of doing this. In constitutions which cannot digest food, or convert it into the oily element, the introduction of the cod liver oil in large doses causes the necessary principle to be easily imbibed into the lacteals, where, uniting with the albumen, it constitutes the elementary granules so necessary to nutrition.

We shall not trouble our readers with an account of the various theories(*b*) which have been promulgated to account

(*a*) Published in 1848; see p. 404.

(*b*) These are given briefly in Dr. Rayner's pamphlet, which, in sixteen pages, and for four pence, will give some *information* to those who are satisfied with the *minimum*.

for the action of the oil, partly because of their very unsatisfactory character, for we think that Dr. Bennett's views, to a great extent, embody the *rationale* of its *chief* operation upon the animal economy, but principally because we are unfeignedly anxious not to withdraw their attention from the main fact—its well-ascertained curative powers. We have already too partially indicated our opinion upon several of these theories, but we cannot resist the pleasure of quoting the following excellent paragraph, probably the best contained in it, from the conclusion of De Jongh's treatise:

"The questions whether the efficacy of the cod liver oil is owing to the iodine, or the fat, or the phosphorus, or to any other of its constituent parts, are solved with great difficulty; for in all diseases, in which it is found to be efficacious, the physician has to fulfil many indications simultaneously, if he expects the perfect restoration of his patient. In general the weakened digestion is to be corrected; the secretions must be restored, and the lymphatic system brought to a higher state of activity; besides which, and what seems to be the most important of all, the tone of the nervous system is to be improved. The slightest reflection will show that neither biliary matter, nor the fatty substance, nor the iodine, nor any one single constituent part of the cod liver oil, is able, of itself, to fulfil these indications; consequently its power, as a remedy, is not to be ascribed exclusively to one only, but to the united operation, if not of all, still of the greater part."

We are aware that it may be fairly objected to these remarks, that since primary mal-assimilation lies at the foundation of the diseases in which its powers are most conspicuous, it is reasonable to imagine that the oil, by remedying this, and supplying a healthy fundamental element of the animal tissues(*a*), thus escaping the results of the bad performance of the digestive functions, may in this manner produce all its therapeutic effects. And we strongly incline to this view. But we deem it to be safer and more philosophical at present to give a certain weight to the observations just quoted from De Jongh. And it is for these very reasons that we object to that author's broad assumption, that the *brown* cod liver oil owes its greatest power to the large quantity of butyric acid and biliary matter it contains. His cases are palpably insufficient to *prove* this point. We cannot comprehend what Dr. Carey considers to be proof, when he speaks of this having been "placed beyond doubt" by the researches of the Dutch trader-physician. We

(*a*) Hence the great importance, as all writers have insisted on, of giving the oil for *a long time*, even after the symptoms of disease have apparently vanished.

make this observation with the more boldness, as neither Dr. Carey nor our readers will accuse us of throwing out any doubts of the great virtues of this variety of oil; nay, we hold it to be highly probable that its virtues *are* connected with the chemical elements mentioned by him. But we are not, therefore, to forget that the results of six cases, experimented upon by the three varieties of oil, those cases not suffering from the same diseases in the three series of experiments, are altogether insufficient to allow us to talk of proof.

In concluding we feel it necessary to remark, that, though the Treatise of De Jongh is a valuable contribution to our knowledge, it is, on the whole, of much more interest to the chemist or mere pharmacologist than to the physician. It is not well fitted for reference, from the particular manner in which it is drawn up. To those who desire practical information on the effects of the oil, its mode of action on the human economy, its methods of administration, and all other questions of importance to the physician, the Treatise, *with the Appendix*, of Dr. Bennett, will be invaluable. They who now, for the first time, become acquainted with the remarkable therapeutic merits of this agent, will, we hope, earnestly seek for fuller information than in the pages of this Journal we are enabled to give; for which purpose we strongly recommend them to obtain his Treatise, the best and, for a long time, the only one in our language.

The Elements of Materia Medica and Therapeutics. By Jonathan Pereira, M. D., &c. &c. Third Edition. London, Longmans. 1849. 8vo. vol. i. pp. 897.

Traité de Thérapeutique et de Matière Médicale. Par A. Trousseau, Professeur de Thérapeutique et de Matière Médicale a la Faculté de Médecine de Paris, et H. Pidoux, M. D. Third Edition. Paris, 1847. 2 vols. 8vo. pp. 1793.

Treatise on Therapeutics and Materia Medica. By MM. Trousseau and Pidoux.

We propose in the following observations to confine ourselves to the subject of the *classification of the Materia Medica*, and shall introduce our views of the arrangements in the works cited above, with a brief account of the general principles on which we believe that a scientific classification of drugs ought to be formed.

In the science of Materia Medica, treating, as it does, of the properties of a large number of bodies, classification is important as a help to the memory, but it has much higher purposes. A *scientific* arrangement enables us to think of and to compare together those drugs which have the greatest number of common and *practically* important properties,—affords us the means of detecting where our knowledge is deficient, whether in the facts or in our mode of interpreting them, or in both,—indicates the way by which these deficiencies are to be supplied,—and is eminently useful in suggesting new methods of observation. In thus favouring the progress of the science, it developes the means of its own rectification and improvement. It is only the student of a scientific classification who can acquire the knowledge which enables him to practise on general principles, and so to avail himself with facility, on all sides, of the rapid advancement of the medical sciences.

We are surprised that many able writers on the materia medica have been indifferent to these important advantages, and that so little care has been devoted to the scientific arrangement of drugs. Many of the existing classifications are unscientific and bad, and are consequently fertile sources of error, both in fact and in generalization. We allude to the so-called therapeutic arrangements, and not to those founded on the natural-historical, sensible, or chemical properties of drugs, which are acknowledged make-shifts to avoid the supposed insuperable difficulties of a scientific classification, and present no claim to our notice. With them we have no more concern than the natural philosopher has with the arrangement of bodies in chemistry, or the chemist with the natural arrangement of plants. The bodies examined by all are the same, but it is the duty of each science to arrange them with reference to the properties (and their practical application, if they have such) which it is the object of the science to investigate. When we avoid this duty, or declare its performance impossible, we virtually deny the right of therapeutics to rank as a science.

It is objected that the whole range of what are termed facts in the science is so involved in controversy, doubt, and obscurity, that an attempt to arrange them systematically is useless, and has the pernicious result of giving precision and an air of truth to error. We maintain, however, that our knowledge of the physiological action of drugs,—which, as will be seen in the sequel, should form the basis of a scientific arrangement,—is sufficiently accurate, and embraces an ample number of undoubted truths for our purpose. Thus, the facts indicated in describing the action of a stimulant, sedative,

tonic, or narcotic, are sufficiently precise to form the basis of a highly useful classification. A physiological arrangement may be pushed too far, or beyond the limits of ascertained truth; and attempts may be made to found classes and orders on phenomena still involved in obscurity. This is the abuse of a true principle, and is no argument against its proper application. Among the many illustrations of this error, which the literature of therapeutics affords, the recent classification of Professor Schultz of Berlin may be cited as perhaps the most pertinent(*a*). The "controversy, doubt, and obscurity," complained of, exist much less in our knowledge of the physiological action of drugs than in our knowledge of the practical application of this action to the treatment of disease, where their existence does not prejudice the scientific value of an arrangement founded on the effects of medicines on the healthy body.

Dr. Pereira observes,

"Scarcely two medicines give rise to precisely the same effects; and as we are unable to determine the nature of the modification produced by each, it is impossible to bring the substances used in medicine under a general good or physiological arrangement"(*b*).

We confess our inability to comprehend this sentence, but the writer is unquestionably in error if he supposes, that, because no two drugs are exactly alike in action, an arrangement of medicines founded upon their effects is impracticable. Those drugs are grouped together, which in their properties *resemble* each other, and we need scarcely remind the reader, that on this principle of resemblance are founded the beautiful systems of classification in the natural sciences. The same author continues:

"Every writer who has attempted it has found the facts hitherto ascertained insufficient for his purpose, and has, therefore, been necessarily obliged to call in the aid of theory; hence the so-called physiological classifications of medicines are in reality founded on the prevailing medical doctrines of the day, or on the peculiar notions of the writer."

Theory was employed, not because of the insufficiency of the facts, but because of the incompetency of the *soi-disant* philosophers in this department of medicine to make a proper use of them. Materia Medica is eminently an empirical science, and every step in the discovery of truth must be made by

(*a*) *Natürliches System der allgemeinen Pharmakologie nach de Wirkungsorganismus der Arzneien.* 8vo. Berlin. 1846.

(*b*) First edition, vol. i. p. 8.

close induction. Unfortunately, the writers referred to by Dr. Pereira,—*e. g.* Brown, Rasori, Broussais, and Hahnemann,—thought otherwise, and, indulging in speculations independently of observation, attempted to predict facts in place of carefully generalizing those already discovered. That previous authors have made a bad use of the facts of the science seems to us a strong reason for our endeavouring to employ them better, and to confine ourselves rigidly to the positive.

The properties of drugs are numerous and of very different kinds, but a little reflection will enable us easily to fix their relative importance in a system of classification. The physiological, chemical, and other properties of a medicine, are examined not for their own sake, but to promote the discovery and explanation of its applications in the treatment of disease. *The discovery, therefore, of the therapeutic application, which is the grand object of the science, should be the presiding principle of its classification;* and of the several kinds of properties which a drug possesses, viz., physiological, chemical, botanical, and sensible, it is beyond question, that the first are a long way before the others in their importance in guiding and suggesting its practical application. Indeed, our object in studying the other properties is to improve and give exactitude to our knowledge of the first. *The physiological action of drugs should form, consequently, the basis of their scientific arrangement.* Yet the other properties are sometimes usefully employed to separate the minor divisions of the physiological classes; but they should only be had recourse to for this purpose, when the physiological action fails to afford sufficient elements of distinction. The chemical, botanical, and sensible properties are now enumerated in, we believe, the order of their value as contributing to the knowledge of physiological action.

We speak here of physiological action, as obtained by the exhibition of medicinal doses. When, from the quantity of the drug, life itself is endangered, the phenomena become more complex, and often assume a new character; as when a stimulant (alcohol), and a tonic (quina), occasion narcotism in poisonous doses. Our science does not require that the consideration of the poisonous effects should be included in the physiological arrangement of drugs. It would give rise to complexity, and confer no advantage in therapeutic application. Indeed, the practical ends of Toxicology and Materia Medica are different; poisons are arranged in groups, whose effects require similar treatment; drugs in groups, whose effects have a common application in the treatment of disease.

It is an essential principle in a physiological classification, that *the drugs be arranged separately, according to their local and general actions,* as between these there is often no correspondence, *e. g.* arsenic, camphor, and nitrate of silver.

Having determined that the physiological action in medicinal doses shall form the basis of our arrangement, it remains for us to ascertain the relative value (with reference to our present subject) of the different effects produced by drugs. Some of these are general, others special. The effects designated by the terms sedative, stimulant, and tonic are examples of the first kind. Their manifestation is not confined to one organ or system, but is extended to the whole body. A sedative does not depress the stomach only, or the lungs, or the circulation, or the nervous system, but all of these. We grant that all are not influenced to the same extent, and that, for example, some sedatives act more powerfully on the vascular, and others more obviously on the nervous system; but we maintain that the Materia Medica furnishes no example either of a drug acting as a sedative on one system, and as a stimulant on another, or of a sedative or stimulant whose power is not displayed more or less distinctly throughout the entire frame. These then are illustrations of *general physiological action, on which, in virtue of its universality, the primary divisions should be established.* The classes thus formed, of stimulants, sedatives, tonics, &c., admit of a greater number of common and important propositions(*a*), and their practical applications are more obvious than any other classes into which, upon different principles of arrangement, the drugs could be thrown. The term "special" as opposed to "general," designates the action on a particular organ or system; thus, digitalis is a general sedative, but operates specially on the circulation; ergot of rye is a special stimulant of the uterus, and belladonna and opium excite special effects on the iris. These are obviously of inferior value to the former; but they serve usefully as elements of distinction for the secondary divisions. Some of them being included in the general effect, of which they are local modifications in degree, as in the special influence of digitalis on the circulation, are of higher value than those phenomena which have no ascertained relation to the general action, as the dilatation or contraction of the pupil.

The divisions should be as nearly as possible mutually exclusive; stimulants should contain no sedatives, and *vice versâ.* The two classes referred to *are* mutually exclusive; but the same perfection is not attainable throughout a physiological

(*a*) The best criterion of a sound and natural system of classification.

arrangement (*e. g.* stimulants, narcotics, and evacuants), and it is not essential to its scientific character, as some erroneously suppose. The nature of the properties themselves, as well as the circumstance, that in our classification we have regard both to the properties and their practical application, renders the attainment of mutual exclusiveness in all the divisions quite impracticable. It is another and a good test of the scientific accuracy of the system; but it would be wrong to secure it with the sacrifice of any practical advantage.

We shall now apply these general principles to the examination of the physiological arrangements in the works of Pereira and of Trousseau and Pidoux, commencing with Dr. Pereira's, of that proposed in which the following is a synoptic view:—

1. Medicines employed for their external or topical effects.	MEDICAMENTA. *Topica.*
a. Acting mechanically	Class 1, T. Mechanica.
β. Acting chemically	Class 2, T. Chemica.
γ. Acting dynamically	Class 3, T. Dynamica.
2. Medicines employed for their remote or general effects.	*Generalia.*
a. Acting on the blood	Class 4, Hæmatica.
β. Acting on the respiratory organs	Class 5, Pneumatica.
γ. Acting on the nervous system .	Class 6, Neurotica.
δ. Acting on the digestive organs .	Class 7, Cœliaca.
ε. Acting on the excernent system .	Class 8, Eccritica.
ζ. Acting on the sexual organs . .	Class 9, Genetica.

The subdivisions are, of

- Class I. Topica mechanica . . .
  - mechanical antidotes.
  - mechanical purgatives and anthelmintics.
  - dentifrices.
- Class II. T. chemica . . . . .
  - caustics.
  - astringents.
  - chemical antidotes.
  - disinfectants.
- Class III. T. dynamica . . .
  - acrids.
  - emollients.
- Class IV. Hæmatica . .
  - *a.* physical
    - diluents.
    - inspissants.
  - *b.* chemical
    - spanæmics, or impoverishers of the blood.
    - hæmatinics, or enrichers of the blood.
  - *c.* dynamical

- Class V. Pneumatica
  - affecting the muscles of respiration.
  - affecting the aërian membrane.
  - diminishing the want of breath.
  - influencing the calorific functions.
- Class VI. Neurotica
  - 1. cerebro-spinals
    - 1. phrenics; affecting the mind.
    - 2. æsthetics; affecting sensibility.
    - 3. cinetics; affecting voluntary and reflex spinal movements.
    - 4. hynics; affecting sleep.
  - 2. ganglionics
    - 1. affecting the heart and arteries.
      - *a.* stimulants, exciting them.
      - *b.* sedantia, depressing them.
    - 2. affecting the alimentary canal.
- Class VII. Cœliaca
  - enterics.
  - hepatics.
  - splenics.
  - sialics and pancreatics.
- Class VIII. Eccritica
  - 1. augmenting secretion; evacuants.
  - 2. diminishing secretion.
  - 3. altering quality of secretions.
- Class IX. Genetica
  - affecting the orgasm.
    - aphrodisiacs.
    - anaphrodisiacs.
  - affecting the uterus.
    - emmenagogues.
    - ecbolics.

We understand it to have been Dr. Pereira's intention in this arrangement to classify drugs according to their physiological effects; but in the very outset he forgets his principle, and we find the members of the three classes of the *topica* arranged, not, according to their general physiological action, into irritants, sedatives, astringents, &c., but, according to Dr. Pereira's views of their *modus operandi*, into the *Topica mechanica, Topica chemica, and Topica dynamica;* and we have only to glance at the detailed account of these classes to be convinced of the confusion and inaccuracy to which this principle of division of necessity leads. Our knowledge of the *modus operandi* of medicines, even in their local action, is manifestly too imperfect to allow of its safely serving the ends of classification. In the first class and second order, entitled "purgatives and anthelmintics acting mechanically," we find with other medicines

tin filings; but so far from our being certain that this medicine operates mechanically, there is good reason to suspect that, when exposed to the combined influence of air and the gastro-intestinal fluids, a portion of it is converted into the proto-chloride, a compound of undoubted energy, and to the operation of which the anthelmintic action of the drug may reasonably be referred. The position of this drug affords a good illustration of the confusion into which our author's arrangement has drawn him; for, on turning to p. 725 of his work, it will be seen that he does not believe in the mechanical explanation of its anthelmintic property. In the dentifrices, forming the third order of the same class, are included chalk, cinchona, and catechu; but the chief value of the first resides in its power of neutralizing free acids about the teeth, and the second and third are useful as astringents to the gums. They are not, therefore, "topical medicines acting mechanically."

In class II., or the *Topica chemica*, are comprised the escharotics, whose operation in the destruction of warts and condylomata is chemical and destructive; but when employed to form issues, it seems an error to include them under "medicines acting chemically." The mere formation of an issue consists, it is true, in the chemical destruction of the skin, but its therapeutic value is due not to the operation but to the vital phenomena which follow, and all of which are embraced in the term issue. Many of the acrids (as mustard, cantharides, and tartar emetic, placed by the author among the dynamical agents) might with as much justice be ranked with the "topical medicines acting chemically;" for, probably, the first effect of these drugs is chemical, and the redness, vesication, and suppuration, which ensue, are secondary vital phenomena, efforts of the skin to throw off or protect itself from the offending irritant. With like reason, the operation of venesection being physical, blood-letting might be ranked with mechanical agents. Astringents form the second order of the same class, but their therapeutic value is probably due more to their vital actions of coagulating blood and constricting the animal fibre, than to their chemical influence on the fluids. Dr. Pereira seeks to justify his arrangement on the ground that their "dynamic influence is apparently a consequence of their chemical action." —p. 158. This may or may not be the case, but certainly the relation of the chemical and dynamic phenomena here is not more apparent than in the acrids, which Dr. Pereira transfers to the dynamic class.

Nearly all the drugs of the third, fourth, and fifth orders of this class, or the antidotes, disinfectants, and antiseptics, exert

their power external to the body, which they do not necessarily influence either locally or generally. It is hence an error to give them a place in a classification founded on "physiological principles."—p. 154. We desire not to exclude these agents from the *materia medica*, in which they may be retained, and the requirements of a scientific classification easily met by the following arrangement. We divide the articles of the *materia medica* into two great divisions:—1, physiological, including such as are employed in virtue of their physiological action; and, 2, non-physiological, including those bodies employed in medicine, but not in virtue of their action on the living body. Into this division are thrown chemical antidotes, disinfectants, lithontriptics, the vermicide section of anthelmintics, &c.; and we avoid the evil into which Dr. Pereira and other authors have fallen, of doing violence to the scientific accuracy of the physiological division, which, in relation to therapeutics, constitutes the really important section of the *materia medica*. The third class of topical agents, or the *Topica dynamica*, comprises the acrids and emollients. We have already stated our suspicion that the first action of an acrid is chemical, and we have now to observe in reference to the emollients, that although their action, when applied externally, is unquestionably in part dynamic, it is also in great part mechanical, and when they are employed as demulcents, entirely so.

These remarks on the first three classes show clearly the inconvenience of selecting the *modus operandi* as the principle of classification of medicines, in the total sum of whose action may often be found all the three elements, mechanical, chemical, and vital, and very generally the two last.

Leaving the *Topica* to enter upon the *Generalia*, the author again changes his ground, and, in place of arranging the medicines according to their general physiological action, or their *modus operandi*, as in the *Topica*, he adopts, as the principle of division, the organ or system on which the drug is presumed to operate more especially. This plan has involved him in confusion and endless repetition, and the resulting arrangement does not respond to a single scientific requirement.

The chief end of the classification of medicines, viz., to facilitate their therapeutic application, is altogether lost sight of by Dr. Pereira. Let the pupil study his arrangement how carefully soever, and afterwards be told that a drug with which he is unacquainted belongs to the class *pneumatica;* if he then be asked, what inferences in relation to its practical employment this information has enabled him to draw? he will reply, none. All the knowledge he acquires is that it "acts on the respira-

tory organs:" but it may influence also, as is the case with most of the *pneumatica*, every other system in the body, and he obtains no clue whatever to the vital object of his studies, viz., whether the drug is likely to be useful or injurious in inflammation, apoplexy, or spasmodic disease of the lungs, or of any other organ or system in the body. Beyond the simple and nearly useless fact, that it "acts on the respiratory organs," not another common proposition can be made of the members of the class (see p. 456, note); and the same objection applies to all the six classes of the *Generalia*.

No attempt has been made to comply with the principle requiring the classes to be mutually exclusive so far as is consistent with the practical utility of the arrangement. In the *hæmatica*, *pneumatica*, *neurotica*, and *cœliaca*, we see in friendly juxta-position tonics, stimulants, sedatives, narcotics, and evacuants, and a large number of drugs may be found in one-half of the classes; a considerable number in two-thirds; and a few are referred to in five of the six or entire number of the *Generalia*.

The third class of the *Generalia* is termed *neurotica*, or "medicines acting on the nervous system." These, says the author,

"may be conveniently arranged in two sub-classes; one called *cerebro-spinalia*, including agents which affect the nervous system of animal life; the other, termed *ganglionica*, comprehending agents affecting the nervous system of organic life."

But this division has no existence in nature; and among the drugs named as belonging to the *neurotica*, it is sarcely possible to find one whose action is confined to either system; and in fact so large a proportion of these are noticed by Dr. Pereira in both sub-classes, that the so-called classification serves the purpose merely of describing their physiological action, not of arranging them in separate groups. Among the *cerebro-spinalia* are placed alcohol, chloroform, tobacco, and opium; but does not alcohol quicken the heart's pulsations? does chloroform never kill by syncope? does not tobacco occasion vomiting, purging, extreme depression of the circulation, and fainting? and does not opium constipate the bowels?(*a*) Aconite, colchicum, digitalis, gentian, and cinchona, influence the organs supplied by the ganglionic equally with those furnished by the cerebro-spinal system, and the attempt to separate them into the sub-classes *ganglionics* and *cerebro-spinals* is therefore vain.

(*a*) The heart and abdominal viscera derive their nervous supply from the ganglionic system.

Tonics form a sub-order of the *cerebro-spinals*, and as the reader may be anxious to know how they got there, we give the author's reasons in his own words. Tonics are "agents which increase the tone of the system," and tone "is greatly influenced by, if it be not absolutely dependent on, the cerebro-spinal system."—p. 206. It appears to us possible that tone may be greatly dependent for its permanent display on the cerebro-spinal system, and yet be improved independently of it. Tonics augment the force of assimilation, and improve the general strength, but of the how and the system by which these ends are attained, we know nothing certain. Their obvious effect on the assimilating power associates their operation more closely with the ganglionic than with the cerebro-spinal system, but, for aught we know, they may increase the force of assimilation independently of all action whatever on nervous systems(*a*).

It would serve no useful purpose to continue our criticism of Dr. Pereira's classification. We believe the principles on which it is based to be wrong, and have no hesitation in saying that, for the practical end of therapeutic science, it is nearly useless, and infinitely inferior to the physiological arrangement in the first edition of his work. In the minor divisions of orders and sub-orders the author's accurate acquaintance with the materia medica is often happily applied, and the whole amply testifies to his cyclopedic knowledge in this department of medicine. It is in the description of individual drugs that the author's strength unquestionably lies, and as we have freely indicated the faults in his generalizations, we have the greater pleasure in stating our opinion, that for method, completeness, and accuracy of detail, the special pharmacology of Dr. Pereira is without a parallel in any language.

The arrangement of MM. Trousseau and Pidoux is simple, and presents few innovations in nomenclature and classes. They divide medicines into thirteen classes, which are described in the following order:—1. Reconstituant tonics (iron); 2. Astringents; 3. Alteratives; 4. Irritants; 5. Antiphlogistics; 6. Evacuants; 7. Excitants of the Muscular System; 8. Narcotics; 9. Anti-spasmodics; 10. Neurosthenic tonics (vegetable bitters); 11. Excitants; 12. Sedatives; and, 13. Anthelmintics.

In many respects imperfect, this classification has greater practical value than that of Pereira. We object to classes 5 and

(*a*) The invigorating or tonic power of certain substances on vegetables gives support to this view.

9, which are therapeutic, and are exceptions to the general principle of division, which is physiological. We would willingly waive the scientific requirement of a uniform principle of arrangement, were difficulty or inconvenience experienced in distributing the anti-phlogistics and anti-spasmodics in a purely physiological classification; but this is not the case, and they very naturally take their places respectively with the sedatives and stimulants. The important distinction between local and general action does not receive sufficient prominence, and in the sequence of the classes no order whatever is recognised. No attempt is made by our authors to group into orders the drugs of each class, and they lose in consequence much of the practical value of a physiological classification. The division of vegetable bitter tonics into the pure, astringent, mucilaginous, and aromatic, is natural, and of obvious utility in practice; and the same remarks apply to the division of stimulants into the alcoholic, etherial, ammoniacal, &c.

The first class or reconstituant tonics contains iron and its compounds, and the adjective term is employed to indicate that the metal is retained in the blood and assimilated; but our present knowledge does not enable us to say with certainty, whether, in the cure of chlorosis, the iron operates simply as a general tonic, or is assimilated and enters directly into the formation of the blood-globule. There are good arguments(*a*) in favour of the latter hypothesis; but we strongly object to a class being founded on an hypothesis, however probable, and would much rather see the chalybeates forming as usual a section of the general class tonics.

We confess a profound dislike to the third class, and its name of alteratives; but it would carry us far beyond our limits to discuss this subject—an old bone of contention with therapeutists; and we must now dismiss the work of MM. Trousseau and Pidoux, reserving for a future occasion our opinion of its general merits.

It may appear to some of our readers, that we attach undue importance to this subject of classification; but its improvement is essential to the scientific character of therapeutics, and surely no time or labour is misapplied, which may tend to raise to its true position this inconceivably neglected department of medicine. We cheerfully accord his due to every successful labourer in the wide domain of medical science; but, on the

(*a*) These are:—1, other tonics have not the same effect as iron in chlorosis; 2, those chalybeates which from their nature are detained in the blood are said to be the most efficacious; 3, the absolute amount of iron in the blood in chlorosis is augmented during a ferruginous course.

other hand, we protest against the injustice of the present day, which is too apt to give more attention and more honour to the veriest tyro who may see a hollow in a cell, or a mould in the excrements, than to him who, by cautious investigation at the bed-side, may have discovered the true action of a medicine, or a new means of allaying pain or of restoring health. Our pages will testify how far it is from our wish to undervalue pathology, histology, and diagnosis: but their importance is brought to light only by the therapeutist. It is for him, and the task is a high and arduous one, to arrange the facts from all these sources, as well as from the materia medica, and to deduce from them general principles, for the successful prosecution of the great aim of all our inquiries, the alleviation of suffering and cure of disease.

The Natural History of Ireland. Vol. II. *Birds; comprising the Orders Rasores and Grallatores.* By William Thompson, Esq., President of the Natural History and Philosophical Society of Belfast, &c. London, Reeve, Benham, and Reeve. 1850. 8vo. pp. 350.

A Manual of the British Marine Algæ; containing generic and specific Descriptions of all the known British Species of Seaweeds. With Plates to illustrate all the Genera. By William Henry Harvey, M.D., M.R.I.A., Keeper of the Herbarium of the University of Dublin, and Professor of Botany to the Royal Dublin Society. London, Van Voorst. 1849. 8vo. pp. 252.

There is no recreation so suited to the habits of the medical man as the practical pursuit of the study of natural history. His professional education so peculiarly adapts him for appreciating its fascinating beauties that it frequently becomes with him a passion; and we, therefore, find that in all ages physicians have been the most successful cultivators of the science. It is not, however, with the wish of inducing any of our readers to abandon their profession, and become natural historians, that we call their attention to the above works, but rather with the view of pointing out to those whose lot is cast in country districts, or in the neighbourhood of the ocean with which our islands are surrounded, valuable aids in a delightful inquiry, to which we doubt not many of them are devoted.

The first volume of Mr. Thompson's work has been noticed in our seventh volume, and the meed of praise so justly its due

then awarded to it; and of the second volume, now before us, we can but say that it fully equals its predecessor. Abounding in practical facts as regards the habits and distribution of the birds which are the permanent inhabitants or but occasional visitants of Ireland, and interspersed abundantly with illustrative ornithological anecdotes, it presents the reader with the facts of history in the attractive garb, we might almost say, of a novel.

The book of Dr. Harvey is a second edition of one published by him eight years ago, but with so many alterations and improvements as to constitute it a new work. The chief improvement is the addition of plates, by means of which all the genera are pictorially illustrated, and the study of a difficult branch of marine botany thereby rendered much more easy. Dr. Harvey's fame, as a botanist and botanical writer, is too widely spread to require any eulogy from us; it is now not only European but Transatlantic, for while we pen these lines he is engaged in the delivery of a course of lectures at Boston, in the United States, for which purpose he was invited thither towards the close of last year; a fact of which, as his fellow-countrymen, we cannot avoid feeling proud, and one which is not alone honourable to him, but affords excellent testimony of the liberality of the Americans.

The present works of both Dr. Harvey and Mr. Thompson are most admirably got out, and do much credit to their respective publishers, who seem to rival each other in their style of publication, especially of books connected with natural history.

PART III.

REPORTS, RETROSPECTS, AND SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

TENTH SESSION.—1849–50.

Malignant Tumour on the Head.—Dr. O'Ferrall said, that the case which he was about to bring under the notice of the Society was, perhaps, of more value as contributing to the diagnosis of tumours in general than as an example of a specific disease.

The patient, a woman about sixty years of age, was admitted into St. Vincent's Hospital a short time since, on account of cancer of the right breast. On examination he found an extensive development of cancerous disease, not only in the breast itself, but likewise in the axillary region. Above and below the clavicle of the opposite side, another morbid growth, evidently engaging the bone, was observed. Concurrent with this state of things, the patient complained of pain, which she referred to the right temple, and described as extending backward towards the side of the head; and, upon examining this locality, the tumour to which he was desirous of calling attention was discovered. It was of the size of a walnut, but very much compressed, resembling a flattened hemisphere; it was wholly immoveable, slightly irregular upon the surface, and the seat of occasional darting pains. These characters, connected with the other evidences of cancerous disease already referred to, left no doubt in his mind respecting the nature of the tumour on the head, which he therefore regarded as a part of a general disease of a cancerous nature, affecting the entire system. The woman gradually sank, exhibiting the symptoms which usually accompanied the disease under which she laboured.

Autopsy.—Upon examining the body after death, the locality of the tumour in the head became the point of special attention, and on raising the scalp it was presented to view, covered by the periosteum, which passed smoothly from the bone over the tumour, being thickened to some extent, but in other respects uninjured. Internally the dura mater was also thickened, but neither perfora-

ted nor destroyed at any point. On cutting away the tumour a perforation, nearly an inch in diameter, was discovered in the cranium; and, from an inspection of the parts, he was enabled to demonstrate that the growth had originated in the diploë between the two tables of the skull; he could distinctly see that the inner table was less extensively destroyed than the external, and that the cancerous mass sprang from the intermediate structure between both tables. The clavicle was the next subject of examination. Its section exhibited cancerous degeneration of the cancellated structure, extending to the outer surface of the bone, where it was connected both above and below with some cancerous masses. A section of the mamma displayed the usual cancerous structure.

With respect to the exact local origin of this cranial tumour, he thought there could be no doubt but that it had originated in the diploë. It could not have originated in the pericranium, for that membrane was quite unbroken, and was involved in no other way than by contact and adhesion. It did not originate in the internal table, for a portion of this still remained, and was adherent to the dura mater by a spicular surface; but from the diploë between the two tables a peculiar malignant structure was observed to spring, which, being continuous with the external tumour, clearly showed its source.

Dr. O'Ferrall exhibited a plate from Cruveilhier's work, showing a similar anatomical arrangement. In his case the tumour had also perforated the cranium at one place, while in another the two tables were unbroken, but separated by small cancerous masses which occupied the diploë, and showed, beyond a doubt, the exact structure in which they originated. Indeed, he believed that in cancerous disease of the bones it generally happened that the growth originated in the cancellated structure.

He exhibited drawings of several cases confirming this view; and in one of them, where a large malignant growth, originating in the femur, had spread in every direction about the hip-joint, it sprang from the cancellated structure, while numbers of independent malignant tubercles were seen scattered through this structure, between the great trochanter and the condyles of the femur.

Dr. O'Ferrall remarked, that, regarded as pathological specimens, the several cases to which he had called attention were possessed of exceeding interest, for they displayed not only the vast extent of structure which cancerous disease occasionally involved, but also the mode in which the disease appeared to be developed in the osseous system. But, even in another point of view, the case before the Society possessed practical value, for it showed the dangerous consequences which might ensue from interfering with a tumour of this description. Scarcely three months since, a lady who lived in the west of Ireland came to town, in order to consult him respecting a tumour on her head, which she was desirous of having removed. On examination he ascertained the tumour was not moveable, was uneven on the surface, and had not any of the external characters of the encysted tumour; it was plainly connected

with the bone, was bound down by the periosteum, and much flattened by its pressure. At the same time the cancerous diathesis was clearly exhibited in the countenance of the patient, so that he was induced to inquire whether she had a tumour in any other part of her body. At first she was unwilling to admit that such was the case, but at length permitted an examination, when a well-marked cancer of the breast, and a lobulated tumour in the axilla, were discovered. Now it was obvious that in this case any interference with the tumour on the head would have been followed by the most serious consequences; and, therefore, independently of its pathological value, the case he had laid before the Society was one which deserved to be placed upon record.

Cancer of the Pancreas and Stomach.—Jaundice.—Rupture of the Gall-bladder.—Dr. M'Dowel exhibited a specimen of extensive cancerous disease in the abdomen.

The patient who was the subject of the case had been under his own observation for about one month in the Whitworth Hospital, and was previously an out-patient at the Talbot Dispensary, under the care of Professor R. W. Smith. The history of the case, which extended over a great many years, was briefly as follows. The patient had for a great length of time laboured under what he called "stomach complaint:" he had occasional vomiting, uneasiness and weight about the epigastric region, and the ordinary symptoms of severe dyspepsia. During the last few years of his life he had lost flesh and strength, so that latterly he had been unable to leave his bed. On admission into hospital his countenance exhibited decided evidence of the cancerous diathesis, and he was greatly emaciated. During the time he was in hospital he vomited only twice, and on these occasions the vomiting was artificially induced by the patient himself, in the hope that it would remove a sense of weight and uneasiness which he experienced in the region of the stomach, and which was never absent. He took extremely little food, and made little or no complaint; occasionally he said he suffered from pain in the lumbar region. On examining the abdomen, which was suspected to be the seat of cancer, it was found unusually hard and resisting to the touch, so as to prevent any examination being made into the state of the different viscera; however, here and there several small, hard, moveable tubercles were felt. The patient gradually got weaker, ten days before his death became jaundiced, and ultimately died in rather a sudden manner.

Autopsy.—On examination of the body after death, a very large amount of disease was discovered in the abdomen. On reflecting the parietes, the effects of previous peritonitis were discovered. All the viscera were firmly united together by strong bands of lymph, which, in some situations, had become considerably elongated, showing that the inflammation was not of very recent occurrence. The whole of the interior of the abdomen, together with the viscera, was stained with bile, a large quantity of which was lying in the meshes formed by the effusion of lymph which had formerly taken place. A large cancerous mass was found to engage the pan-

creas and the pyloric extremity of the stomach, extending from thence back to the vertebræ. The transverse arch of the colon was adherent to the front of the stomach. When it was detached, an opening as large as a shilling, with rounded edges, was observed upon the anterior surface of the stomach. The adhesion of the colon to its margin had prevented the opening from becoming a perforation. The stomach was remarkably capacious, and its thickness greatly increased by the hypertrophy of the muscular coat. In its interior were seen projecting tumours covered by the mucous membrane and filled with cerebriform matter: several of these presented the depressed centre, an appearance so characteristic of encephaloid tubercle of the liver. The pyloric opening was considerably constricted. The pancreas was converted into a solid mass of scirrhus. On tracing the biliary ducts, the ductus communis choledochus was found greatly dilated, so much so as to allow the little finger to be passed even into its subdivisions. Lower down the duct was completely obstructed, so that a probe could not be passed into the duodenum. The state of the gall-bladder presented a contrast to that of the duct, as it was collapsed, and not larger than usual: this was owing to a rupture of its coats having taken place, by which bile had become extravasated in great quantity. This opening existed in the fundus of the gall-bladder, and had the appearance of a rent, with irregular edges. The coats of the gall-bladder presented an exceedingly dark appearance, but there was no evidence that this viscus, previously to its rupture, had been much distended. It is well known, that in cases of mechanical obstruction the gall-bladder is capable of undergoing a great amount of distention. In a case recorded by the late Mr. Todd, the gall-bladder was so enormously distended as to form a sac capable of containing three or four quarts of fluid bile; it formed a large fluctuating tumour in the abdomen, reaching as low as the crest of the ilium on the right side. On the supposition that it was an hepatic abscess, the cyst was punctured, an enormous quantity of bile was evacuated, but death speedily followed. Similar cases are recorded by Dr. Stokes, in the Cyclopædia of Practical Medicine.

The glands around the aorta formed a mass of firm cancerous structure, which pressed upon that vessel, and actually encroached upon its caliber, which, at one point, was greatly diminished. Dr. M'Dowel remarked that the disease in this case had originated either in the pyloric end of the stomach or in the head of the pancreas, then, in its progress, gave rise to ulceration of the stomach, which had almost caused a perforation of that organ, but was arrested by the adhesive inflammation which was set up when the ulceration had extended as far as the serous membrane: general peritonitis was thus established, and lymph was abundantly thrown out. These changes constituted what might be termed the *first stage* of the complaint. Subsequently, as the disease extended, the ductus communis choledochus became involved; by the obstruction of this duct jaundice was produced, and finally the rupture of the gall-bladder brought the case to a fatal termination.

Acute Phthisis.—Dr. Law drew attention to a specimen illustrative of a case of acute phthisis. It was that of a man of about forty years of age, a steward and gardener by occupation, who had been constantly in the enjoyment of good health up to November, 1848, when, in consequence of his being greatly exposed to severe weather, he contracted a cold. This cold was accompanied by a cough, which, however, never distressed him much until a month previous to his admission into hospital, which took place on the 7th of November last. He was a tall, bony man, and rather thin; but it was difficult to determine whether the emaciation resulted from natural causes or from disease. At the period of his admission he complained of a most distressing cough, accompanied by a sense of great soreness, which he referred to the sternum. The chest was rather flat, slightly depressed under the right clavicle, and very little, if at all so, under the left. Percussion gave a universally clear sound over the thoracic region, except just beneath the acromial end of the right clavicle, where a certain amount of dulness was perceptible. There was, perhaps, an exceedingly slight degree of dulness beneath the left clavicle also. By auscultation a trifling amount of crepitus was heard under the right clavicle, but no abnormal sound could be detected under the opposite clavicle, though the respiratory murmur was feebler than natural in that situation. In the other portions of both lungs the respiration, both anteriorly and posteriorly, was rather coarse, having lost its natural smoothness, but beyond this there was nothing abnormal discovered. The cough being the most distressing symptom, particular attention was paid to it. From the 7th of November, the date of his admission, to the 17th of the same month, the case progressed in a favourable manner; but on the morning of the last-mentioned day, when he entered the ward where the man lay, he found him sitting up in bed, literally gasping for breath. His face was deeply congested, and its expression indicative of the greatest alarm and distress. Dr. Law's first impression was, that some small cavity, which had escaped detection, had caused perforation of the pleura pulmonalis, and that pneumothorax had supervened; for he had never before, in his practice, observed an instance of so sudden and distressing dyspnœa arise from any other cause. On percussing the thorax his suspicion of pneumothorax was not confirmed; he could find nothing but a slight comparative dulness at the posterior part of the left side of the chest, and upon applying the stethoscope he detected a well-marked crepitus, which extended over all the posterior wall of the left lung, with the exception of its base, where there was complete absence of respiration. He concluded at once that extensive pneumonia or congestion had set in. The patient being in a very weak condition, he did not feel warranted in drawing blood from him, and therefore contented himself with administering tartar emetic combined with calomel and opium, and with applying a blister to the chest. The medicines, however, disagreed with him, giving rise to irritation in the bowels, and he was therefore obliged to discontinue their use.

For some days the man became a little better, but eventually

his breathing became as distressing as before, and he expired on the 24th of November. Dr. Law had no doubt that, on the 17th of November, percussion gave a clear sound over the surfaces of both lungs, except, as before observed, under the right clavicle and at the postero-inferior part of the left side of the chest; and the only sign which he was enabled to detect with the aid of the stethoscope was a crepitus at the posterior part of the left lung, and in the antero-inferior portion of the right.

Autopsy.—When the chest was opened, the heart first attracted attention; it was placed in the middle of the mediastinum, the lungs almost meeting in front of it. An intimate union existed between the internal surfaces of both lungs and each side of the pericardium. The left lung was removed from the chest with much difficulty, owing to adhesions between the pleura pulmonalis and costalis. It was necessary, in order to remove it, to cut it through at the base. A thick coating of lymph covered the entire lung, the surface of which was marked by impressions of the ribs. On making a section of the lung, from the apex to the base, a universal development of miliary tubercles was found to have taken place throughout the entire organ; and, in making a similar section of the opposite lung, it was found to be in precisely the same condition. Both lungs, from their apices to their bases, were universally filled with tubercles, as little advanced in their upper as in their lower parts.

Dr. Law thought there was scarcely a case on record in which phthisis had run its course so rapidly as in the example before the Society; the stethoscopic signs affording so slight evidence of the presence of tubercles, at least to any extent, before the period of his first dyspnœa, on the 17th of November. This peculiar modification of the disease had been noticed by Louis, and also by Dr. Stokes. The last-named physician had generally found it to supervene in cases of fever, and had divided it into three classes, namely, bronchitic, pneumonic, and hemoptysic; the present case apparently belonging to the second of these divisions, the pneumonic. Dr. Stokes, however, differed in some respects from Louis, who stated, that in all the cases he had met with, the patients had been previously in comparatively good health. The cases of Dr. Stokes, on the contrary, occurred in patients whose general health had been broken down by typhus fever, with gastro-enteric complication. If any proof was needed to show that the present case was not an instance of protracted phthisis, it was only necessary to point to the size and healthy muscular condition of the heart, which was invariably small and attenuated in a case of phthisis which pursued its ordinary chronic course. He gave a section of the left lung to Dr. Steele, with a view to have it examined under the microscope, and he had since been informed by that gentleman that he had never previously seen such a perfect specimen of tubercles as those which he observed in the portion of lung which had been submitted for his examination. In other instances, the tubercles he had seen were always more or less broken down; but in this case they were entire and quite uninjured. This state of things tended to confirm his view with respect

to the rapidity with which the tubercles must have been developed, for the pulmonary interspaces were not loaded with fat, and the pulmonary structure had not undergone any of those changes which always ensued in pulmonary tissue in which respiration had not been carried on for a length of time.

Scrofulous Disease of the Elbow-joint.—Mr. Hamilton exhibited a specimen showing the effects of scrofula upon the elbow-joint. The subject of the case was a girl about thirteen years of age; she had been for a length of time suffering from the disease, and was brought to the Richmond Hospital in order to have the limb removed. On examining the joint he found it in a flexed position, out of which the patient was unable to move it, the slightest attempt at motion being attended with agonizing pain. The tumefaction was great, and a number of large fistulous openings led into the interior of the joint, one of them passing directly to the head of the radius. This opening was sufficiently large to admit the top of the finger, and at the bottom of it the head of the radius could be felt. Under these circumstances his first idea was to remove the limb at once; but, as the arm was of so much importance to a patient who lived by her labour, he determined to give her a chance of retaining it. She was accordingly placed under treatment for a month; but ultimately he was obliged to remove the limb, in consequence of the inroads made on her constitution by the disease; on dissection it presented a fine specimen of the changes produced in a joint by the action of scrofulous disease. This disease usually commences in the articulating ends of the bones, from whence it ultimately extends to the cartilage, the synovial membrane, &c. When they looked at a joint in which the diseased action had been long going on, they would be disposed to think that the soft structures were first engaged, the disease having advanced much further in these than in the bones. But this occurred for a very obvious reason, namely, that all diseased action was more rapid in the former than in the latter. The end of the humerus was much changed in appearance, being greatly enlarged, irregular upon the surface, and somewhat softened. One of the most interesting features of the case was the appearance of the olecranon process. Though the patient was not more than thirteen years of age, the olecranon process in the affected arm was much larger than it is ever found in the adult subject. It was, therefore, to be borne in mind that, in cases of scrofulous disease of the bones, the latter may be found in a hypertrophied condition. The cartilages of the joint were almost gone, and their place, and the place of the synovial membrane, was occupied by a peculiar pulpy mass, which in some places might be removed with the finger. External to this the areolar tissue was consolidated by the effusion of lymph. There were also many fistulous openings, which burrowed between the muscles and fascia before they entered the joint. The bones were remarkably soft and light, and their cancelli were filled with a grumous fluid.

(*To be continued.*)

MEDICAL MISCELLANY.

Surgical Cases. By William Hargrave, M. B., Professor of Surgery to the Royal College of Surgeons in Ireland, Surgeon to the city of Dublin Hospital.

The following cases are submitted to the profession, as not being altogether devoid of interest, and for the purpose of recording the pathological condition of parts so severely injured:

1. *Dislocation of the Right Knee inwards.* Reported by Mr. Ainsworth.—John Taaffe, aged 48, a theatrical performer, was admitted into the City of Dublin Hospital at twelve o'clock, p. m., on the night of the 25th of April, 1849, under the care of Dr. Geoghegan.

It appeared that about an hour previous to admission, the patient, who was travelling in one of the carriages of the Atmospheric Railway, leaped from it whilst going at the rate of about twenty miles an hour, and dislocated his right knee; he also received a few slight abrasions about the face. Being intoxicated at the time, he cannot state the circumstances attending the accident, except that he recollects, after leaping from the carriage, he alighted with his feet on the ground.

On examination, great deformity of the right knee-joint is evident; the femur is dislocated inwards; the axes of the tibia and fibula running very much outwards, and these lines forming with the thigh a much less obtuse angle externally than natural. The inner condyle of the femur is very prominent; the integuments covering it are white, shining, tense, and cold, and there is a hollow below it into which the finger can be placed: the patella is pushed outwards, projects over the external angle, and is slightly moveable. The tibia is partially dislocated from the femur, the internal articulating surface of that bone being removed from the inner condyle, and looking obliquely upwards and inwards. Flexion and extension of the leg are perfect, and it can be made to form nearly a right angle, externally, with the femur, without causing much pain. Three abrasions are seen on the anterior part of the injured limb, and there is great pain on the slightest pressure about the joint.

Reduction was effected without much difficulty, by extension and counter-extension, the leg and thigh being in the extended position, and the bones pressed into their natural places; when they first regained their proper state, the tibia fell backwards, but was easily replaced. The limb was then put on the double-inclined plane, that position seeming best adapted for retaining the tibia *in situ*, simple dressing applied to the abrasions, and the whole secured by a bandage. At about two a. m., being restless and uneasy, he got twenty minims of Acetum Opii. The next morning it was reported that he had some pain about the joint, of an aching character, but not very severe;

tongue brown; complains of thirst; still smells strongly of spirituous liquors; pulse 88, and pretty good; a dusky kind of redness is visible about the patella, but the part is not unusually hot, nor is there any symptom of inflammation.

April 27th; third day. Pulse 84 and soft; tongue slightly brown; still some thirst; no sign of inflammation about the joint, but the dusky redness is still visible around the patella. The bandages were removed, and the parts examined. The inclination of the plane was lessened, and the bandages re-applied.

This patient was transferred to Dr. Hargrave by Dr. Geoghegan on May 4th; on the 8th instant an erysipelatous blush appeared on the limb; it took its origin from the abrasions already noted, but no marked constitutional symptoms were present. The parts were smeared with mercurial ointment, and saline diaphoretics, with the compound spirit of sulphuric ether, prescribed. On the 14th of May, the twentieth day, the erysipelas had entirely disappeared, and the ulcers on the fore part of the leg were healing; the general health was good; the leg was directed to be kept in the same position.

Everything seemed to promise favourably, when on the 24th, a month after the injury, a serious change was observed to take place, ushered in by several severe rigors, with occasional sickness of stomach; pulse 108; tongue slightly furred; thirst; bowels constipated, but *no unusual appearance* about the limb. He was ordered cathartics, with calomel and James' powder, and some aromatic spirit of ammonia. On the 25th, the report states that erysipelas appeared on the leg, extending from the ankle to the knee, attended with "stinging pains." The inguinal glands are also enlarged and painful on pressure; pulse 116, tolerably good; a slight tendency to sickness of the stomach, with anorexia and thirst.

He was ordered an effervescent mixture of bark, with tartar emetic; the limb to be smeared with the mercurial ointment, and eight leeches to be applied to the inguinal glands; a poultice afterwards.

On the following day the pain and swelling of the inguinal glands had considerably abated, but the erysipelas had extended up the leg and the inferior third of the thigh; there was also a slight, irregular, isolated blush higher up, along the course of the saphena vein, which felt hard and cord-like, and was painful on pressure: great swelling existed about the knee-joint, especially towards the inner condyle, with obscure fluctuation on this aspect of the articulation. Tongue brown; pulse 108, and somewhat weaker; no appetite; thirst; stomach inclined to be sick. A grain of calomel, with the sixth of a grain of the acetate of morphia, was ordered three times a day; eight leeches to be applied to the inner part of the thigh, and the bark to be continued. These medicines were persevered in, with a repetition of the leeches, until the 30th of May, when the report states that the hardness and tenderness in the course of the veins have disappeared since the application of the leeches; skin of the leg corrugated; thigh seems rather full, with conside-

rable œdema of the foot; fluctuation at the joint very evident, and the integuments thinning. He raves occasionally at night; tongue rather moist; pulse 106, and pretty full, though very compressible; appetite bad; some thirst. This morning the leg was lying out of its usual position, being semiflexed, attended with great deformity of the knee-joint, there being considerable prominence of the inner condyle of the femur, and a falling backwards of the tibia; in fact nearly all the symptoms of the original injury reproduced, showing that no adhesion had as yet taken place, nor any reparation of the ruptured ligaments of the joint. The parts were re-adjusted, and the limb placed in the extended position. The collection of matter about the knee-joint was opened, when a large quantity of thin fluid pus escaped. Aromatic confection and ammonia were added to the bark mixture, and nitrate of silver was applied to the limb, with the view of preventing the extension of the erysipelas up the thigh.

From May 31st to June 6th, considerable quantities of matter, somewhat improved in character, were discharged from the inside of the knee, and at the daily dressings the quantity was increased by pressure made on the internal side of the thigh, and also *in the popliteal region;* the erysipelas had ceased to extend. On the latter day the report mentions that the discharge from the punctures is rather less; there is a good deal of tenderness at the external part of the leg, with some redness and fluctuation, and the erysipelas has already disappeared. He still feels weak, but the countenance is better, and the appetite improved. An incision, two inches in length, was made at the external part of the calf of the leg, where the tenderness and fluctuation were felt, and a large quantity of serum, with some sero-purulent matter, was discharged; a poultice was then ordered to be applied. The limb was again lying out of its proper position, and the symptoms of dislocation were still manifest; it was placed on the double-inclined plane, and again secured.

June 11th. He has suffered since the last date from purging, with variation in quantity as to the discharge of matter, both from the inside of the knee and outside of the leg. This day's report states that the countenance is pale, and covered with cold perspiration; pulse 109, and weak; some purging; discharge from the puncture at the knee and from the leg less. The leg continuing swollen and œdematous, and the integuments about the middle of the internal part being rather red, with symptoms of fluctuation, and other signs of matter in that situation, a short incision was made, and a probe passed freely into it, when a quantity of serum and a small portion of sero-purulent matter issued. No abscess or purulent deposit could be detected, although the finger was passed deep into the parts.

From this time until his decease, which took place on the 17th June, decided hectic symptoms set in, with nocturnal and occasionally diurnal delirium. The skin covering the internal condyle of the femur gave way, exposing the corresponding surface of that part of

the bone, while pressure on the patella caused a discharge of matter apparently proceeding from the joint; the cutaneous ulceration increased, and in a few days exposed the cartilage of incrustation of the femur.

It may be here remarked that the patient stated that about nine years previously to this accident he had dislocated the left knee when fencing, and was under surgical treatment for nine weeks, the limb having been placed in the straight position; the movements of the joint were never perfectly recovered, as there was some limit to complete extension.

On *post mortem* examination, which was made by Mr. Freeland, the right limb presented the following appearances:—The foot was everted, and almost the entire of the internal condyle of the femur exposed through an opening which had been formed by the ulcerative process that was going on for some days before death. On examining the joint, the patella and its ligaments were sound; the cartilages of the femur were ulcerated on their inferior aspect, leaving about a quarter of an inch of the condyles bare; the ulceration on the external condyle was larger, and surrounded by a highly vascular fringe, which extended backwards as far as the origin of the posterior crucial ligament. The semilunar cartilages were somewhat vascular; the posterior crucial ligament entire and uninjured; the anterior ruptured across, about its centre; the internal lateral ligament was completely ruptured at its origin; the external lateral was partially torn.

An opening of about half an inch in length was found a little internal to the popliteal vessels, through which a probe might with facility be passed into the joint; pressure on the anterior part of the articulation caused an immediate flow of pus and serum from the aperture; the coats of the vessels in the immediate vicinity of the joint were thickened in a very evident manner, but their canals were perfect. Above the knee, as high as the hip-joint, and below, as far as the ankle, the whole of the areolar membrane was in a state of slough, and infiltrated with very fetid greenish pus; the muscles in the anterior femoral region were completely disorganized, and of a greenish hue; the femur was imbedded in and separated from the surrounding muscles by a large quantity of matter, and no evidence of a circumscribed abscess existed, the purulent fluid being diffused throughout every tissue; the periosteum around the femur was in many parts highly vascular and thickened(*a*). A dissection was also made of the left knee-joint, which the patient stated to have been luxated about nine years previously. On removing the integuments and superficial fascia from the thigh, the fascia lata, for about a third of its inferior portion, was found exceedingly thickened, particularly for an inch above the insertion of the rectus into the patella. The ligamentum patellæ was in its whole length somewhat

(*a*) This preparation is now in the pathological museum of the Royal College of Surgeons.

thicker than natural, but in other respects the parts around the joint were healthy. On opening the articulation, and throwing down the patella, it was seen *to be very much hypertrophied* in the antero-posterior diameter; its cartilage was in some parts rough. The alar ligaments presented a highly vascular edge, which was gradually lost towards each condyle. The ligamentum posticum of Winslow, as it passes between the heads of the gastrocnemius muscle, had apparently been ruptured and again united, having in that part an increase of size and induration. The rest of the articulation appeared to be healthy, and no satisfactory explanation was afforded by the examination to account for the loss of perfect extension of the leg which the patient experienced ever since the accident; unless it could be attributed to the injury sustained by the ligamentum posticum, which I think was insufficient to account for it.

From the injury inflicted on the right knee in this case, and the effects resulting from it, the only hope for the safety of the patient would have been amputation, in case there was a remission of the hectic symptoms; but that the operation would have been successful is more than doubtful, as, from the condition in which the muscles and the areolar tissue on the anterior part of the thigh were found to be, very little hope could be entertained of their ever assuming a healthy action; irritative and hectic fever would almost to a certainty make their appearance again, and continue their progress, uncontrolled, to a fatal termination; thus superadding suffering to injury, and bringing into disrepute that important department of medicine, operative surgery.

2. *Compound Fracture and Laceration of the Arm.* Reported by Mr. Ainsworth.—James Doyle, aged 29, a railway labourer, was brought into the City of Dublin Hospital at nine o'clock, A. M., on the morning of the 22nd day of June, 1849, and placed under the care of Dr. Hargrave. It appears that the patient was engaged in the performance of some duties at the factory, near the terminus of the Kingstown railway, about half an hour previous to his being brought here, when, by some incaution on his part, his arm got entangled in a revolving shaft, and sustained the following injuries:

The left hand and fully five inches of the fore-arm are torn completely off (a brother workman carried them in his apron); about three inches above the elbow-joint an extensive lacerated wound is seen, which has torn through the humerus and all the soft structures, leaving the two portions of the arm connected only by a small piece of the triceps muscle; this frightful-looking laceration extending obliquely from without inwards and downwards, has widely separated the two portions, and left the ends of the bone and lacerated parts of the muscles exposed to view; there was a continued free oozing of blood from the upper portion, but no distinctly-marked flow from any particular point; to this part some lint dipped in turpentine was applied. As soon as Dr. Hargrave saw the patient he applied a tourniquet on the axillary artery; yet, although the vessel was fully commanded, the flow of blood continued.

A consultation was now held, when it was determined that amputation should be performed immediately. Accordingly, at eleven o'clock, A. M., Dr. Hargrave performed amputation of the arm, selecting the flap operation, and sawing the bone immediately below the tuberosities of the humerus. During the operation the patient appeared very weak, and his face looked pale and death-like; and when placed on the table he vomited the contents of his stomach, ejecting them *with great force.* Two sutures only were used, the lips of the wound being retained in apposition by strips of plaster. Very little blood was lost during the operation. He was placed in bed, and ordered twenty-five drops of tincture of opium, in an ounce of camphor mixture; cold lotions to be applied to the stump, &c. Two o'clock, P. M.—He had vomited once since the operation, but does not complain of much pain, and has dozed occasionally; the lips of the wound were brought into more perfect apposition by three more sutures; pulse 108, and pretty good. Nine o'clock, P. M.—Has dozed occasionally; no more pain than might be expected; thirst; wound looks healthy, but little action manifested as yet; pulse 112, and pretty fair; surface of natural warmth; has no desire for food. Ordered some ice, he refused to take any wine or stimulants, being a teetotaller.

23rd June, second day. Dozed occasionally till four o'clock this morning, from which time till eight o'clock he slept soundly; pulse 108, and pretty fair; skin natural warmth; tongue moist; complains of but little pain; is thirsty; wound looks well, but there appears a want of action in it; no desire for anything to eat or drink, but likes the ice. Three o'clock, P. M.—Seems weak and rather low; pulse 128, very small and weak; respiration hurried; perspiration about forehead; face pale; is restless; surface and extremities warm. He was ordered two ounces of wine immediately, and to be repeated if necessary. Seven o'clock, P. M.—Has taken three ounces of wine up to this time; pulse almost imperceptible at the wrist, higher up very thready, weak, and 130; respiration quick; copious perspiration on the forehead; feet rather cold; surface warm; restless; does not speak, but seems conscious; passed water some time ago. He now got two ounces of brandy, with the yolk of an egg beat up with it; also some aromatic spirit of ammonia and ether. Heaters were applied to his feet, and he was ordered chicken broth, to be given at intervals, also brandy and other stimulants if necessary. The cold lotion was discontinued; simple dressing applied to the wound. Half-past nine o'clock, P. M.—Has got an ounce of brandy since, and some chicken broth; pulse variable, occasionally not to be felt at the wrist; at other times perceptible, but thready, quick, and weak; respiration 44; copious cold sweating on the forehead and face; lips pale; eyes heavy and dim-looking; surface warm; has not spoken since, but seems conscious; ordered a stimulant mixture with brandy, yolk of egg, tincture of capsicum, and laudanum. He died at three o'clock, A.M. No *post mortem* examination could be obtained.

The death of this patient, forty hours after the amputation,

was unexpected, as he had rallied between Friday night and Saturday morning, both from the shock of the severe accident which had befallen him, and also from that of the operation, which was quickly performed and with the loss of not an ounce of blood. To delay the operation until his system had recovered more from the immediate effects of the injury was impossible, as the man was sinking rapidly from capillary hemorrhage, which no pressure nor application could control. Some years since I had another case of uncontrollable capillary hemorrhage, the result of a raking gun-shot wound along the fore-arm, which called for immediate amputation, an account of which I published in the ninth volume of the Medical Press. In the present instance it is possible that the compound or double shock of the accident and of the operation proved too much for the natural powers to overcome; still, if the operation had not been performed, he could not have survived the injury for the length of time recorded. His resolution, indeed I might say obstinacy, in refusing wine, when first ordered, being a teetotaller, certainly did not aid his system in its efforts to support itself under the trying circumstances in which it was placed; and when he did consent to take any diffusible stimuli, such valuable moments were lost, never to be regained, that the stimulants were of no benefit, even almost for a moment, in staying the fatal event. Could it be possible that any internal viscus was injured, and gave no external evidence of such a lesion? No indication existed of such being the case in the visceral cavities, which were examined during life.

In conclusion, I may notice, as not unworthy of being recorded, that some of the nerves composing the brachial plexus were unusually small, namely, the median, ulnar, and musculo-spiral; none of them being one-half their usual size: there was also a high division of the axillary artery.

Cases of Disease of the Urinary Organs. By Henry Thompson, M.D. Surgeon to the Tyrone Infirmary.

1. *Retention of Urine and Formation of Abscesses in the Testicles.*—John Lawn, aged 26, married, a labourer, hitherto healthy, was seized, about three weeks before his admission into the Infirmary, on the 22nd of March, 1849, with what he describes as a severe cold, attended with acute headach, chiefly affecting his forehead and ears. These symptoms, of which he gives a most unsatisfactory account, continued for about a week, and then subsided, when he found that he was unable to pass a drop of urine. He remained in great distress from this cause for about another week, when an unsuccessful attempt was made to pass an instrument, which only brought away a little blood. The retention has since continued; the overflowing urine dribbling away, accompanied, since the day before yesterday, by some brownish, muco-purulent matter, and by considerable enlargement of the testes, and an inflamed appearance of the scrotum.

On admission he presented the appearance of intense distress and anxiety; scarcely able to totter along, with his body bent forwards, and his legs widely separated; his features were sharpened; countenance sunken, and of a sallow, yellowish colour; eyes prominent and glassy, and emaciation extreme; clothes all wet, and exhaling an abominable ammoniacal odour. The tongue was dry and brown, and the pulse almost imperceptible. The lower part of the abdomen was occupied by a tense globular tumour, formed by the distended bladder, which reached to the umbilicus; both testicles were swollen to the size of hens' eggs, and tender on pressure; and the scrotum was œdematous, thickened, and of a dusky red colour.

As soon as he was got into bed, I passed a full-sized gum-elastic catheter, which seemed to enter the bladder very freeely, but was so obstructed by some obstacle within it, that no urine flowed. I therefore withdrew it, and passed a large silver instrument, when, feeling the obstacle with it too, I pushed it firmly on; a slight jerk ensued, as if it suddenly passed through something solid, and then the contents of the bladder, amounting to five pints of thick, brown, offensive fluid, with an occasional streak of blood, flowed off through it. When the flow ceased he complained of severe pain at the neck of the bladder and along the penis. He was then ordered a warm bath. In the evening the pulse was full and bounding, 120; and he was much inclined to sleep.

March 23rd. Slept half the night; passed a little water twice. The bladder is again distended, and the urine overflowing. The silver catheter was passed, and three pints of the same sort of urine flowed away. Towards the end of the evacuation it became more clear and natural in appearance. Tongue has a dry, red, circular spot, the size of a shilling on its tip; thirst not so great; pulse 78; skin of natural temperature.

25th. The instrument was introduced twice daily since; and last night he passed, by his own efforts, a considerable quantity of urine, which was clearer and more healthy. Had some castor oil yesterday, which opened his bowels; he is now bathed in perspiration; tongue clean and moist; little thirst; appetite returning; pulse 78; testes continue swollen; hard and painful swelling of scrotum diminished; they are kept enveloped in wet tow, covered with an oiled silk bag. The instrument was passed, and nothing but a little pus came away.

27th. Has passed water freely twice a day since. It still comes slowly; but he is able to relieve himself completely. Urine now clear and healthy; pulse 75; skin cool; tongue clean; appetite good. Matter having formed in the right testis, an opening was made, and about a dessert-spoonful of pus evacuated.

30th. Since last report passes water freely, of healthy appearance, and not oftener than natural. No discharge from urethra.

April 3rd. A second abscess having formed in the lower part of the right testis, it was opened to-day. The first incision, which was in the upper part of the gland, has healed.

6th. An abscess having formed in the left testis, it was opened to-day, and about half an ounce of healthy pus evacuated; general health improving.

9th. I passed a full-sized silver catheter this morning; some slight resistance was felt at the neck of the bladder: urine quite healthy.

13th. Right testis has regained its natural size and feel, with the exception of slight induration of the epididymis; left testis diminishing rapidly; wound healed; passes water as well as ever; rapidly regaining his flesh and strength.

14th. Discharged from hospital.

This man having gone to America soon after, I had no opportunity of discovering what effect the suppuration of the testes had upon his virile powers. The original cause of the attack of retention is somewhat obscure; but my opinion at the time was, that it had occurred towards the close of an attack of fever, which was either unknown to his friends, or which they wished to conceal, lest it should form an objection to his admission into a surgical hospital. This appeared to me to be the only cause likely to produce such an effect in so young a man, who was free from any disease of the urinary passages, or lesion of the cerebro-spinal system. The retention having once taken place, the over-distention of the bladder paralysed its muscular fibres, and rendered them incapable of performing their functions, although the original cause had subsided. But the chief point of interest in the case is the suppuration of the testes, an attendant on prolonged retention of urine which I have not seen noticed before, and which seems to be quite different from the sympathetic enlargement of this organ, so common as an effect of irritation of the urethra caused by gonorrhœa, gout, stricture, or the passing of bougies, and which is never known to end in suppuration, except where it becomes the exciting cause of scrofulous disease of this gland.

2. *Retention of Urine, from Abscess at the Neck of the Bladder.*—Archibald M'Collum, aged 35, previously healthy, though addicted to drink, and never having been affected with any venereal complaint, after exposure to cold and wet, about five weeks previously to his admission into the Tyrone Infirmary on the 26th January, 1849, began to experience some pain and difficulty in passing water, together with very great frequency, amounting sometimes to twenty calls in the course of the night. The pain was principally felt at the extremity of the penis, and along the passage. This day he experienced more difficulty than ever, and, fearing an attack of complete retention, was at last forced to apply for relief.

On examination I found the bladder distended, the penis semi-erect, no discharge from the urethra, and no swelling of the testis. There were some hardness and thickening, with considerable tenderness, around the urethra, where it passes under the arch of the pubis. He could pass but very little water at a time, and that with great forcing, the stream scattering in all directions. He was ema-

ciated ; countenance hollow and sunken ; skin hot ; pulse 90 ; a red, dry patch on the tip of the tongue, the remainder of it moist and clean.

I at once passed a small silver catheter, as far as the membranous portion of the urethra, where its progress was arrested, and immediately a gush of healthy pus issued from its extremity; about an ounce came away altogether ; and when I attempted to push on the instrument a little, blood appeared. I then had him placed in a warm bath, in which he passed some water with much greater ease, and in sufficient quantity to relieve the distended bladder.

January 27th. He slept more last night than he has done for the last five weeks altogether ; made water eight times, much more freely, and in greater quantity; no tumour now above the pubis; pulse 60; skin cool. He was ordered two grains and a half of Dover's powder, three times a day.

28th. Slept well ; made water about nine times since ; it now passes freely, and without pain ; has not had a call since five o'clock this morning. I passed a middle-sized gum-elastic catheter into the bladder without any difficulty, emptying it of about three ounces of healthy-looking urine. He felt some pain when the instrument was passing over the perineum and prostate, which subsided immediately on its being withdrawn.

30th. Had a dose of castor oil last night, which operated violently, and has much reduced his strength, and increased his haggard appearance; made water but six times in the last twenty-four hours, in a full stream, and without pain or difficulty. Ten o'clock, P. M.— Has had retention of urine since twelve o'clock to-day, and is now in great pain. A hot bath failed to relieve him, so I passed a gum-elastic catheter, through which, when it arrived at the membranous portion, about a table-spoonful of pus flowed, followed immediately by about half a pint of bloody urine. On withdrawing the instrument, he passed some clear, healthy-looking urine, with complete relief.

31st. The relief was but transient, as the desire soon returned, and he passed a night of great pain. The bladder is now quite full, and the bed wet with the urine which has been dribbling away. I introduced a gum-elastic catheter, which, on arriving at the neck of the bladder, stopped, and immediately a discharge of bloody pus, followed by bloody urine, took place, but without diminishing the tumour above the pubis ; by then withdrawing the instrument a very little, and suddenly depressing its handle, it entered the bladder, and twenty ounces of clear, healthy urine passed off, with complete relief. He passed water freely about three hours afterwards.

February 1st. Until about one o'clock last night, he did not make water oftener than three times ; after that he began to feel pain at the neck of the bladder, and calls to urinate more frequently, but he was able to relieve himself sufficiently to get some sleep. His bladder is not distended to-day, but he has frequent desire and pain in passing water; pulse 66; skin cool; no thirst; ap-

petite pretty fair; countenance haggard and sunken. I examined the prostate from the rectum to-day, and could discover nothing remarkable, nor did the examination give any pain; there is some fulness about the urethra, where it passes under the pubis, but no hardness or œdema, or anything to point out the situation of a collection of matter. I passed the instrument with exactly the same results as yesterday morning, the pus being in considerably smaller quantity, and only about eight ounces of healthy urine in the bladder.

2nd. He passed water but five times since; slept well; complains of severe pain along the penis and in the glans, after passing water. I endeavoured to introduce the same instrument I passed yesterday, but could get no farther than the neck of the bladder, from which the same purulent fluid and some blood escaped. I could not get it on by any manœuvre.

5th. Has passed water about six times every twenty-four hours since; the same quantity of pus has been brought away by the instrument every morning, but I was unable to get it into the bladder until to-day, when I succeeded by hooking the point close up under the pubis, and suddenly depressing the handle, and six ounces of healthy urine escaped.

8th. Same treatment continued, without any change, until last night, when he was again seized with complete retention. The instrument was passed, and the bladder emptied, at ten o'clock, P. M., after which he was easy until three o'clock this morning, when partial retention and frequent desire came on again. At nine this morning I passed the instrument; a quantity of thin, serous pus coming first, and then, on passing on the instrument, the bladder was emptied of healthy urine. Had an injection this morning, which opened his bowels.

9th. Slept well; up only twice, and then passed water very freely.

10th. Up but three times last night, and then passed his water pretty freely; his right testis has become swollen to about three times its natural size; there has been a slight discharge of pus from the urethra ever since the instrument was first passed; had a rigor yesterday, followed by perspiration; pulse 66 this morning; tongue has a dry, brown streak down the centre; does not complain of thirst.

13th. Instrument has not been passed since the 8th; makes water freely, and not more than five times in the twenty-four hours; swelling of testis diminishing.

25th. Has not required an instrument since; swelling of testis diminishing rapidly; constant discharge of pus from the urethra, but in small quantity, and chiefly after making water; complains of occasional pain in right iliac region, and pain and difficulty in defæcation; the finger in the rectum detects a large, hard tumour, engaging the right side of the prostate, which is very tender on pressure; he is much emaciated, and perspires occasionally; general health in other respects pretty good.

March 14th. Has not required the instrument since; his treat-

ment has been entirely dietetic, and he has gained flesh and strength; the discharge of pus from the urethra continues, but in daily diminishing quantity; the testicle has resumed its natural size; tumour of prostate much diminished, very hard, and has quite lost its tenderness. Left the hospital to-day.

April 3rd. Called on me to-day, much improved in health and strength; passes water freely, five or six times in the twenty-four hours, three or four drops of yellowish-white matter following each evacuation.

3. *Enlargement of the third Lobe of the Prostate, with Transposition of the left Kidney.*—Gilbert Glass, aged 70, was visited for the first time on the 26th September, 1849. He was then suffering from retention of urine, which had been dribbling away for the last four days. The bladder could, with great difficulty, be felt low in the cavity of the pelvis. He was suffering great distress, and severe attacks of involuntary forcing, during which he passed a spoonful or two of urine, but without any relief. He had an immense scrotal hernia of the right side; was much emaciated, and very weak; the skin hot, and the tongue dry. I immediately passed without difficulty a small-sized gum-elastic catheter, having previously increased the curve, and depressed it very quickly on reaching the neck of the bladder: about a pint of pale urine came away. He stated that he had suffered more or less from difficulty in passing water for the last twenty years, but never had complete retention before. From this date it became necessary to pass the instrument from two to four, and sometimes six times daily. The urine became loaded with pus. Urinary hectic set in, and terminated in death on the 4th of December, 1849.

The body was examined sixteen hours after death. On opening the abdomen the external appearance of the viscera was found healthy; the bladder, small and thickened, lay low in the pelvis. It, with the penis and urethra, were in a very hurried manner removed(*a*), and the bladder and urethra laid open, when the cause of the symptoms was indicated by the enlargement of the third lobe of the prostate, which projected into the bladder, and was of the size and shape of a sparrow's egg, forming a complete obstacle to the passage of the urine. The mucous membrane on each side was thrown into a fold, which formed a pouch looking towards the urethra, and explained the difficulty which was sometimes experienced in passing the instrument. The bladder was very small, and its muscular structure so thickened as to resemble a uterus at the fourth month of gestation. The mucous membrane was thrown into elevated folds, which crossed and interlaced each other, leaving deep cells between them, like the carneæ columnæ of one of the ventricles of the heart. The orifices of the ureters were enlarged; the ureters greatly dilated, and the whole mucous membrane pencilled over with a net-work of enlarged blood-vessels.

(*a*) There were very great difficulties in obtaining an examination of the body, and the friends were in an adjoining room during the operation.

There was no trace of a kidney on the left side. The right side of the abdomen contained a firm fleshy mass, extending from the concave surface of the diaphragm downwards through the right lumbar region into the bottom of the pelvis, where it was in contact with and attached to the posterior surface of the rectum. This mass was covered anteriorly by the peritoneum; and, on removing it entire, it was found to consist of the two kidneys, the upper one being about twice the size of the lower, and connected with it by a dense, reddish-coloured, areolar structure, resembling the remains of the renal capsule. As I was much pressed for time, I removed the whole without observing either the arrangement of the vessels or that of the ureter, not imagining that the lower part of the tumour could be a kidney. On cutting into it, however, its nature was very plain. The pelvis, with part of the ureter issuing from it, the calices, and infundibulæ were greatly dilated, and filled with pale-coloured, clear urine, with flakes of muco-purulent matter floating through it; the mucous membrane highly vascular; the cortical and tubular portions very distinct, but the former pale, to a great extent disorganized, and infiltrated with purulent matter. The upper portion of the mass consisted of the right kidney, more than double the natural size, and in a much more advanced state of disease than its fellow; there being no distinction at all discoverable between the different structures of the gland, all pale, softened, and infiltrated with pus, the membranous portions greatly dilated, the mucous membrane highly vascular, and the cavities all filled with purulent urine.

4. *Fungus of the Bladder.*—Lewis M'Erlane, aged 64, a broken-down, weak, emaciated old man, with a most painfully distressed expression of countenance, was admitted into the Tyrone Infirmary on the 8th July, 1849. He complained of great pain along the urethra, and at the neck of the glans, coming on chiefly after making water, which he was called on to do almost every ten minutes. The urine deposited a quantity of ropy, adhesive mucus, of a brownish colour, mixed with lymphy shreds, and occasionally dotted and streaked with blood.

There is a firm, solid tumour to be felt above the pubis, in the region of the bladder, and which inclines to the side he lies on. It is rather tender when pressed on, and does not vary in size; is not perceptible to the eye, and has not hitherto attracted his own notice. It is of an ovoid shape, somewhat larger than a goose egg, and can be felt from the rectum projecting backwards above the prostate, which is also somewhat enlarged. The tongue white and dry, brown at the tip; skin cool; pulse 84; complained of pain and weakness across the loins. The disease commenced about two years before, when, after making water, he suddenly felt pain at the neck of the bladder, which subsequently returned whenever he made water; the desire became more frequent, the pain more harassing; and, from having been previously healthy and strong, he began to lose flesh rapidly, and since then the symptoms have been gradually getting worse.

A gum-elastic instrument of full size was passed into the bladder; it brought away about two ounces of pale urine, with thin brownish flakes floating through it, without diminishing in the least the tumour above the pubis. The bladder was subsequently washed out with warm water, and injected with a two-grain solution of nitrate of silver, without any effect being produced on the local symptoms, which continued much the same. His general health, however, gradually became worse under the influence of a low fever, accompanied by intense thirst, which terminated his life on the 9th of December, 1849.

On opening the abdomen, the bladder was found rising out of the pelvis in the form of a soft, solid tumour, somewhat larger than a goose egg. It was of a deep, brownish-red colour. On pressing it, some thick, whitish, purulent matter, escaped from the urethra. The abdominal viscera had a dark, congested appearance; and the large intestines contained a considerable quantity of scybalous fæces.

On removing the bladder and laying it open, its coats were found thickened, the lining membrane having been converted into a soft, lobulated, fungous mass, which completely obliterated the cavity of the viscus; the colour was reddish-brown, and the surface of the lobules was covered with a loosely adhering pellicle of a lighter colour, similar to what was passed with the urine. The interstices of the lobulated mass were filled with a thick, creamy matter. The prostate was very slightly larger than natural, and the urethra was perfectly free from obstruction of any kind. The kidneys were rather atrophied, but otherwise healthy, and the ureters were healthy.

SELECTIONS FROM BRITISH AND FOREIGN PERIODICALS.

Formulæ employed by M. Ricord *in the Treatment of the various Forms of Syphilis.*

The following summary of the plan of treatment adopted by this distinguished French surgeon, in venereal diseases, cannot fail to prove interesting to our readers.

Non-malignant Varieties.—1. Inflammation of the glans penis and prepuce: Injections of the following solution are to be made three times a-day between the prepuce and the glans: Nitrate of silver, twelve grains; distilled water, one ounce. 2. Abortive treatment of gonorrhœa: A single injection is to be made with the following solution: distilled water, one ounce; nitrate of silver eight grains; and this powder to be taken *three* times daily: cubebs, two

drachms and a-half, and powdered alum fifteen grains; mix. 3. Injection for gonorrhœa when the period for the abortive treatment is past: Rose water, six ounces; sulphate of zinc and acetate of lead, of each twelve grains; to be used three times a-day. 4. Internal treatment of gonorrhœa: Balsam of copaiba, syrup of tolu, syrup of poppies, of each one ounce; mint water, two ounces; gum Arabic, as much as may be sufficient; orange-flower water, half an ounce; to be made into an emulsion, of which a table-spoonful is to be taken three times a-day. 5. Acute stage of gonorrhœa: Twenty leeches to the perineum, followed by a warm bath, cooling drinks, confinement to bed, low diet; to use a suspensory bandage, and to take four times a day one of the following pills: Lactucarium and camphor, of each two scruples, to be made into twenty pills. 6. Gleet (goutte militaire): The following injection to be used three times daily: Rose water and red wine, of each six ounces; alum and tannin, of each eight grains.

Malignant Varieties.—*Primary Symptoms.* 1. Abortive treatment of chancre: During the first five days after contagion, destroy the chancre with Vienna paste. 2. True chancre not indurated: Frequent dressings with aromatic wine; extreme cleanliness; occasional light cauterization with nitrate of silver; rest; emollient drinks. When inflammation exists, antiphlogistics, purgatives, emollient applications. (No mercury). 3. Phagedenic chancre: Complete cauterization with nitrate of silver, acid nitrate of mercury, potassa cum calce, or the actual cautery, according to circumstances. In a more advanced stage, lotions composed of aromatic wine, three ounces and a half, and extract of opium, two grains and a half; or aromatic wine, eight ounces, and tannin, twenty-four grains; or, in the scrofulous diathesis, distilled water, three ounces and a half, and tincture of iodine, one drachm; or the application of sulphur ointment, and the use of sulphurous baths. Internally: Tartrate of iron and potash, one ounce dissolved in eight ounces of distilled water, of which one ounce is to be taken three times a day. 4. Indurated chancre: Three dressings daily with the following ointment; Calomel, one drachm, and lard, one ounce; mercury to be given internally. 5. Abortive treatment of bubo consequent on the absorption of the virus of a non-indurated chancre: Deep cauterization with potassa cum calce, to be continued for ten minutes; the separation of the eschar is to be promoted. 6. Bubo consequent on indurated chancre: Antiphlogistics are to be employed according to circumstances, and vents must be given to the purulent matter by cauterization with caustic potash; the glandular mass situated at the bottom of the opened bubo is subsequently to be gradually destroyed by caustics; an ointment composed of equal parts of extract of belladonna and mercurial ointment may be added to the poultices after cauterization. 7. Horse-shoe bubo, and gangrene: For the former the same treatment is to be adopted; for gangrene, lotions with the following mixture: Chloride of lime, one ounce; distilled water, three ounces and a half; or the application of a

powder composed of equal parts of prepared charcoal and powdered cinchona bark.

Secondary Syphilitic Symptoms.—A spoonful of compound syrup of sarsaparilla to be taken three times a day in a glass of decoction of soapwort leaves; one of the following pills to be taken daily: Protoiodide of mercury, and lactucarium, of each thirty-five grains; extract of opium, twelve grains; extract of hemlock, one drachm and a half; to be divided into sixty pills.

Tertiary Syphilitic Symptoms.—A spoonful of the following syrup to be taken three times a day, in a glass of decoction of soapwort: Syrup of sarsaparilla, thirty ounces, and iodide of potassium, one ounce.

Scrofulous Complications.—The following emulsion is to be given in three doses: Iodine, two grains and a half; oil of sweet almonds, one ounce; gum Arabic as much as may be sufficient; almond emulsion, three ounces and a half.

Mercurial Stomatitis.—Decoction of lactuca sativa, five ounces; honey, half an ounce; hydrochloric acid, fifteen drops; to be made into a gargle to be used three times a day.

Salivation.—One drachm of flowers of sulphur, mixed with honey, to be taken daily; water acidified with nitric acid, and sweetened, to be used as ordinary drink. The following gargle to be used three times a-day: Decoction of lactuca sativa five ounces; honey, one ounce; and hydrochloric acid, fifteen drops.

Aphthæ in the Mouth.—Decoction of hemlock, six ounces and a half, and bichloride of mercury, two grains and a half; to be used as a gargle three times a day.

Warts are to be sprinkled twice a day with a powder composed of equal parts of savin, oxide of iron, and burned alum.—*Gazette des Hopitaux*, February 9, 1850.

Reybard's Operation for Paracentesis Thoracis modified. By M. Trousseau.

The patient is to be placed on the edge of the bed, taking care that he shall experience the least possible motion, in order that the portions of false membrane, which would otherwise be detached, may not float in the fluid and obstruct the canula; the trunk should be elevated. Having placed the patient in this position, an imaginary line is to be drawn from the anterior edge of the axilla to the level of the eighth rib, a little behind which spot the puncture should be made. A small incision is first made with a lancet through the skin, as if for the operation of venesection; the integument is then to be drawn upwards with the fingers, so that the incision may correspond to an intercostal space. The canula is passed through the centre of a circular piece of goldbeater's skin or pig's bladder previously moistened, which is then tied firmly round its neck, so as to project over the orifice for some distance. The trocar and canula thus armed are pushed into the chest where the skin had been cut, to the depth of an inch or an inch and a half. As soon as the ope-

rator feels the canula grasped by the muscles, the trocar is to be withdrawn, when the fluid gushes out. If a shred of membrane or an albuminous flake opposes the passage of the liquid, a double-eyed gum-elastic probe, of a little less caliber than the canula, is procured. The goldbeater's skin is to be partially opened, and the probe introduced into the canula; it removes the obstruction, while its eyes give passage to the fluid. This method was devised by M. Lenoir. The removal of the fluid must be assisted by steady pressure on the abdomen and on the chest; and when it has ceased to flow, the trocar is to be rapidly withdrawn. The skin instantly falls back, the superficial and deep openings no longer correspond, and the only dressing required is a small piece of court-plaster over the wound. At the same time that you relax the chest and abdomen, the air, drawn in by the tendency to a vacuum in the cavity lately filled with serum, rushes through the bronchial tubes, extending them and expanding the lung, which partly resumes its normal dimensions, allowing the respiratory murmur to be again heard over two-thirds of the chest, provided the effusion was recent and the adhesions not very firm.—*Journal de Médecine et de Chirurgie Pratiques*, March, 1850.

[The intention of this mode of operating is to prevent the admission of air into the pleural cavity during the operation, when the patient inspires; the moistened goldbeater's skin or bladder closing up the orifice the moment there is the least cessation of the flow of liquid, the escape of which, however, it does not prevent. The spot selected for the puncture is much too low down; we prefer the intercostal space between the fifth and sixth ribs.]

Remarks on Vermifuges. By M. Cazin.

Dr. Cazin, of Boulogne-sur-Mer, having had the opportunity of treating a large number of worm cases, has published the following interesting account of his experience. He states that he has frequently employed the common Spigelia or worm-grass. He administers it in the form of decoction, prepared by boiling two drachms of the herb in a quart of water to one-half. The decoction is then expressed, strained, and flavoured with a little lemon-juice and a sufficient quantity of sugar. The dose for an adult is two wine-glassfuls, followed by a wine-glassful every six hours until the desired effect is produced. To children and delicate persons a smaller quantity is to be given.

Wormwood (Absinthium) is an excellent indigenous anthelmintic; it is also a powerful tonic and stimulant, the use of which, continued after the expulsion of the worms, prevents their reproduction. M. Cazin often uses a wine prepared by digesting an ounce of wormwood, with an equal quantity of garlic, in a bottle of white wine, of which he gives from one to three ounces every morning. This wine is well-adapted for poor lymphatic subjects, wasted by wretchedness, and suffering from the influence of a marshy soil. The Absinthium maritimum is likewise a very good anthelmintic. M. Cazin gives it to the extent of one or two drachms boiled in four or five ounces of

water, with the addition of some white sugar, or of any anthelmintic syrup. This is quite a popular remedy in the maritime districts, and almost always succeeds with children affected with worms.

Although a case of poisoning by Cevadilla has been reported, M. Cazin has administered this vermifuge with success in cases in which ordinary anthelmintics had but little effect; but he has always commenced with a very small dose, in order to ascertain how far it would be borne by the digestive organs. For children the dose of this plant is from a grain and a half to four or five grains of the powder of the seeds, mixed with syrup of rhubarb; for adults eight or nine grains, with the addition of a little sugar and a few drops of oil of fennel. In each case the dose is to be repeated daily for four days, after which the infusion of chamomile is to be given.

Assafœtida possesses acknowledged anthelmintic properties, and is suitable for cases of sympathetic nervous affections produced by the existence of worms. It thus, like valerian, fulfils a twofold indication. In a case of nervous affection, which M. Cazin believed to be idiopathic, the administration of assafœtida both determined the disease and revealed its true cause, by effecting the expulsion of a number of lumbrici. This result has, in three cases of chorea and in two of epilepsy, enabled him to recognise that sympathetic irritation, depending on the presence of intestinal worms, was the sole cause of disease in these instances. Under ordinary circumstances M. Cazin frequently combines assafœtida with calomel in pills. This combination, of all those that he has employed, succeeds best in expelling lumbrici. He has also combined it with black oxide of iron, particularly in anemic patients. Assafœtida may be given in powder, in doses of from four grains to half a drachm.

The essential oil of turpentine is not merely useful in cases of tænia, it is also decidedly efficacious in expelling the lumbrici. M. Cazin has sometimes, in cases of lumbrici and ascarides, administered with advantage turpentine enemata, prepared by suspending, by means of yolk of egg, from one drachm to half an ounce of the oil in decoction of tansy, absinthium, worm-seed (semen-contra), or Corsican moss.

Common salt is very destructive to worms; it is given alone in large doses dissolved in water; it should be taken on an empty stomach. M. Cazin also frequently administers it in the form of enema, with brown sugar, linseed or poppy oil, and a sufficient quantity of water. With children it almost always succeeds.

Like all tonics, iron has the advantage of destroying worms, at the same time that, by imparting tone to the intestines, it prevents their reproduction. From six to eight grains of iron filings, mixed with an equal quantity of rhubarb, and taken twice or three times a day, have often been sufficient to expel the worms contained in the intestines. M. Cazin succeeded in rapidly curing a boy nine years of age, emaciated and pale, whose sleep was disturbed, and who was suffering from spasmodic movements similar to those which characterize chorea, by the exhibition of pills of sulphate of iron, combined, according to Fuller's formula, with aloes, senna, &c., under which

treatment he voided twenty-three lumbrici in four days. He has also used with remarkable success Bosen's mixture, containing extract of black hellebore and sulphate of iron. But what he chiefly gives to children, as well as to adults, is the syrup of citrate of iron (four parts of citrate to sixty of simple syrup, and one of essence of lemon), in doses of from two drachms to half an ounce to children, and from half an ounce to two ounces to adults.

M. Cazin remarks that calomel, so efficacious as an anthelmintic, ought never to be combined with an alkaline chloride, as the formation of corrosive sublimate would probably ensue from their admixture. In like manner, the combination of calomel with cherry-laurel water, or emulsion of bitter almonds, would give rise to the development of two formidable poisons, corrosive sublimate and cyanide of mercury.

The effects of the male fern, tin, pomegranate bark, hellebore, &c., require merely to be noticed; and the properties of the pomegranate root bark are so well known that they need not be dwelt upon. M. Cazin has remarked nothing particular respecting other anthelmintics. He merely says that cod liver oil has succeeded with him in the cases of two females, one of whom passed twelve lumbrici the same day that she had taken in the morning three table-spoonfuls at intervals of an hour.

But, whatever be the medicine selected, we must not, like routine practitioners, be content, when the worms are killed and dislodged, with this merely palliative cure. A very important indication remains to be fulfilled, viz., to prevent their reproduction. This object is attained, according to M. Cazin, by the adoption of a tonic and stimulant regimen, which must be long continued, and, above all, by the employment of bitter and chalybeate preparations. He has found the ferruginous chocolate to be sufficient, in the case of children, to prevent the relapses which are for many years very apt to occur. Wine taken while fasting has succeeded with the poor inhabitants of the marshes, accustomed to live only on vegetables and milk; and he has also remarked its efficacy as a preventive of worm affections in other instances.

To these observations of M. Cazin, the editor of the *Journal de Médecine* has appended the following practical remarks. The number of experiments tried by M. Cazin leaves no room for doubt respecting the enormous amount of worm affections which he must have met with. Such a result may appear strange to Parisian physicians, who attribute to the presence of worms in the intestines only a very trifling influence over the symptoms formerly ascribed to them. But if worm affections are rare among the inhabitants of large towns, they are frequent and generally more serious among the peasantry, and particularly among those who are poor and placed in unfavourable hygienic circumstances. We shall, therefore, take the present opportunity of mentioning the efficacy of *brown santonine*, lately brought under the notice of the readers of the *Bulletin de Thérapeutique*, by M. Gaffard, an apothecary at Aurillac.

The difficulty experienced in procuring pure santonine, both on account of its high price, and for other reasons, has induced M. Gaffard to endeavour to obtain from *worm-seed*, a product which may possess the advantages of the former, and at the same time be free from the objections to the use of the latter. This product he calls brown or impure santonine; it is obtained in the following manner:

Take of Aleppo worm-seed, three ounces; carbonate of potash, one ounce; slacked lime, sifted, half an ounce; water, from three pints to three pints and a half. Place the mixture on the fire, stirring occasionally with a wooden spatula; let it boil for an hour; on removing it from the fire pass it with expression through a linen cloth, let it settle, decant, and add hydrochloric or nitric acid until it reddens litmus without being sensibly acid to the tongue. Allow it to rest, pass it through a filter previously moistened, or through a piece of close canvas, and allow the product which remains on the filter to dry in the open air until it acquires the consistence of firm butter. This product, which is a mixture of santonine, resin, and essential oil, will answer for the various pharmaceutic forms in which the practitioner may wish to exhibit it. M. Gaffard gives it in the form of lozenges composed as follows:

Brown santonine, three drachms; powdered sugar, thirteen ounces; powdered gum, one ounce and a half; essential oil of lemon, twenty-five drops. Place the brown santonine in a marble mortar; add by degrees, and with constant trituration, the sugar mixed with the essential oil and the gum, so as to make a homogeneous powder. Form with a sufficient quantity of water a mass of the desired consistence, and divide it into lozenges, each of which shall weigh, when dried, fifteen grains; each lozenge will then contain somewhat more than one-third of a grain of brown santonine.

For infants under six months the dose will be one lozenge night and morning; from six months to a year, two lozenges night and morning; from one to two years, three, and from two to four years, four night and morning; for children of five years and upwards a lozenge for each year of the child's age should be given night and morning. The medicine to be continued until the desired effects are no longer produced.—*Journal de Médecine et de Chirurgie Pratiques*, March, 1850.

[A remedy for tape-worm, which has been for some time employed in France under the name of kousso, has been recently tried in King's College Hospital, London, with marked success. It is an infusion of the dried flowers of the Brayera anthelmintica, a native of Abyssinia, in which country it is a popular remedy for this worm, which is very prevalent amongst the inhabitants. A single dose, which is prepared by macerating for a quarter of an hour half an ounce of the dried flowers powdered in half a pint of luke-warm water, is taken at a draught, the suspended powder being all swallowed. Lemon juice may be taken before and after the dose. It usually brings away the worm in an hour or two after it has been taken. Those who have tried this remedy state that it is equally safe as effectual; and the only objection to its employment is its high price at present.]

MEMOIR OF THE LATE RICHARD CARMICHAEL, F. R. C. S. I.

It has been often truly remarked that an account of the life of a medical practitioner, let him have attained even the highest position, presents but little to interest the general reader. Necessarily devoid of the varied and brilliant incidents which so commonly chequer the career of the churchman, the lawyer, the politician, or the pure man of letters, who may have obtained eminence in their several walks in life, it can exhibit little more than the scenes consequent on the routine practice of an art devoted to the relief of that suffering and pain which are the ordained lot of man. Yet for these very reasons it attracts the attention of the labourers in the same career, who are struggling through the field that has been already successfuly trodden; and medical biography possesses peculiar charms for the profession. With this view our medical brethren must have seen that a portion of the pages of the present series of our Journal has been devoted to this subject, and the lives of those who are no longer of our time, but whose examples should live in our memory, are sedulously preserved. Some of these bright lights in the history of medicine adorned ages that have long since passed away, and some have been our contemporaries,—our friends; but among all we cannot point to one whose name should more deservedly adorn the pages of medical history than that of him whose biography we are now about to sketch.

Mr. Carmichael's family, as the name indicates, is of Scottish extraction; the branch which settled in Ireland was directly descended from that in which the earldom of Hyndford, now extinct, existed, and the idea of claiming the title for his elder and surviving brother, for a long time seriously engaged the attention of the subject of the present memoir, but the loss and destruction of some family records presented an insurmountable bar to the legal proof requisite, in the investigation of which he spent much time, and, when he had acquired wealth, expended much money. His father, Hugh Carmichael, was a practising solicitor, residing in Dublin, and holding the appointment of Deputy Clerk of the Crown for the counties of Meath, Louth, and Drogheda. Richard, the fourth son, was born in Bishop-street, in this city, on the 6th of February, 1779. His education was intrusted to the Rev. John Fea, at that time a literary teacher of eminence; but we cannot learn that in his early days his habits foreshadowed the high position he afterwards attained.

In 1794, Richard Carmichael was, in his fifteenth year, bound apprentice to Mr. Peile, being one of the many celebrated men whom the present father of Irish surgery has educated. After serving two years only of his apprenticeship, he passed his examination as assistant surgeon; thus evidencing in his youthful days those habits of industry and application which in after life tended

to retain him in that eminent position to which his talents so rapidly led him, and which he enjoyed until his sudden death, "in spite," to use the words of a previous biographer, "of several occurrences in his history which would have shaken most men from it." His medical education was entirely conducted in the then school of the College of Surgeons in Ireland; and by a diligent attendance in the clinical wards of the extensive hospitals attached to the House of Industry, which are now known as the Richmond, Hardwicke, and Whitworth Hospitals, he first laid up those stores of practical information, the effects of which were afterwards so manifestly shown in his various writings.

Shortly after passing the requisite examination above referred to, he was appointed assistant surgeon to the Wexford Militia, holding, as was then usual, an ensign's commission also. On appointment, he was sent to take charge of the detachments in out quarters; but the skill and attention he displayed soon attracted the notice of his superiors, and the surgeon was ordered to relieve him, while he was stationed with the head quarters of the regiment, the sole medical care of which was intrusted to him, then but little more than in his boyhood. He was afterwards appointed to the medical staff at Duncannon Fort, and finally left the service on the reduction that ensued after the peace of Amiens. In the year 1800 he passed his examination, and obtained the diploma of the Irish College of Surgeons, and in the year 1803 he settled to practise in Dublin.

Mr. Carmichael at once entered ardently into the laborious duties of a metropolitan practitioner, omitting no opportunity, and sparing no labour to acquire practical knowledge, as the fruit of which he rapidly attained a distinguished position in his profession. The first public appointment he held was that of surgeon to St. George's Hospital and Dispensary, to which he was elected in the same year that he came to reside in Dublin. While attached to it he carried on his inquiries into the nature and treatment of cancerous disease, a subject which engaged his attention throughout the whole of his subsequent career. These led to the publication of his first volume, in 1806(*a*), *a second edition* of which appeared in 1809. In it he advocated the independent life of cancer, attributing a vital existence to the cartilaginous septa and processes, which radiate amidst the surrounding cellular substance and glands: this carcinomatous animal he regarded as a kind of zoophite or polypus. The remedy he proposed for its destruction, and the consequent cure of the disease, was the carbonate (sesquioxide) of iron, which he employed as a local application, and at the same time administered internally, stating that he was led to its use from believing that, as

(*a*) An Essay on the Effects of Carbonate of Iron upon Cancer, with an Inquiry into the Nature of that Disease. By Richard Carmichael, Member of the Royal College of Surgeons in Ireland, and Surgeon of St. George's Hospital and Dispensary. 8vo. pp. 116.

iron was effectual in destroying intestinal worms, it might be equally destructive of other parasitical animals. These views were not so opposed to the state of knowledge of pathology which then existed, as the position it has since attained—chiefly by the aid of chemistry and histology, sciences then in their infancy—might lead us to suppose; and although they were regarded as somewhat novel, the reviewers of the day received them with respect, and spoke highly of the talents and attainments of the author(*a*). To this the research displayed in the history of the disease, and the account given of the various remedies that had been employed in all ages in its treatment bear sufficient evidence. He also published a short paper on his farther experience of this and the other preparations of iron in the disease in the first volume of the Dublin Medical and Physical Essays, in 1807. In the same volume of this Journal, at p. 299, is contained a communication, which is stated to be from an anonymous correspondent, but which bears internal evidence of being from the pen of Mr. Carmichael, in which "proposals for establishing a cancer hospital are submitted to the public." The following quotation from the introduction will show what enlarged views he then held, and by what philanthropic motives he was actuated: "The advantages which must result from a cancer hospital for the admission and relief of the poor, being considered by a few individuals who are anxious to establish so desirable an institution, they hope that others may be induced to co-operate in the undertaking, if a short detail of the benefits to be expected were laid before the public. The object in view is not only to investigate a disease so long supposed incurable, and to prove the virtue of every remedy hitherto in use, or that our increasing knowledge shall deem worthy of a trial, but to relieve or restore to health patients whose cases are not incurable, and to offer an asylum to others who are precluded by the hopeless and offensive nature of their disease from admission into the other charitable institutions of this country."

In the year 1810 Mr. Carmichael published an "Essay on the Nature of Scrofula, with Evidence of its Origin from Disorder of the Digestive Organs; illustrated by a Number of Cases successfully treated, and interspersed with Observations on the general Treatment of Children." In this year he was appointed one of the five surgeons of the Lock Hospital, in the wards of which he was enabled to mature and practically test those ideas on syphilis, and on the use and abuse of mercury in its treatment, which he afterwards gave to the world in his great work, the first edition of which appeared in 1814(*b*). It is on the views here propounded, which were

(*a*) See Edinburgh Medical and Surgical Journal, vol. ii. p. 372.

(*b*) An Essay on the Venereal Diseases which have been confounded with Syphilis, and the Symptoms which exclusively arise from that Poison, illustrated by Drawings of the Cutaneous Eruptions of true Syphilis and the resembling Diseases. By Richard Carmichael, M. R. I. A., President of the Royal College of Surgeons in Ireland, and one of the Surgeons of the Lock Hospital. 4to, part i. pp. 121; part ii. pp. 116. London, Longman, 1814.

variously modified, but never altered, in the many editions through which the work subsequently passed, and in his published clinical lectures on the disease, that the fame of Mr. Carmichael as an original observer, a correct investigator, and a sound practical surgeon, principally rests. Of these views we need not here enter into any detailed account, for they are, to the profession, "familiar as household words;" but we cannot avoid expressing our decided opinion that the true discrimination of the various forms of syphilitic disease, and the caution in the use of mercury in its treatment,—so remarkable when contrasted with its abuse in the days when he wrote,—which now so universally prevails amongst surgeons, must be chiefly ascribed to their promulgation. His ideas met with much opposition from the writers of the day, and especially from the Edinburgh school. The Edinburgh Medical and Surgical Journal, the then exponent of the views prevailing there, reviewed the first edition of his work with great severity, yet in concluding paid the following compliment to the youthful author: "We shall recommend this treatise to our readers as a repository of valuable cases, and as contributing to accelerate the progress of opinions relative to the treatment of diseases which are constantly mistaken for syphilitic affections by the majority of those practitioners whose education has been somewhat limited, and as tending to open the eyes of many to the actual variety both of primary and constitutional symptoms in which mercury is not required"(*a*). To this review Mr. Carmichael wrote a reply, which the Editor inserted in the same number of the Journal, and which occupied no less than twenty of its pages. In it he gave a masterly exposition of the doctrines he propounded, and pointed out the errors of the reviewer in a manly, vigorous, and logical style, free from any acerbity that might not unnaturally have been engendered by the strictures of the critic.

Mr. Carmichael was appointed one of the surgeons of the Richmond, Hardwicke, and Whitworth Hospitals, and House of Industry, in 1816. This appointment he held until 1836, when, on resigning it, he was nominated consulting surgeon. The circumstances attending his resignation deserve to be noticed, as a proof of how little he permitted professional jealousy to influence his actions, and of the kindly feelings towards such of his professional juniors as had gained his confidence, or whose talents he esteemed, by which his conduct through life was actuated. On the death of Mr. M'Dowell, one of the surgeons to the hospital, Mr. Adams and Dr. Macdonnell seemed to have had nearly equal chances of succeeding to the vacancy, when, to prevent any clashing of interests between them, and to secure the appointment of two good surgeons to the institution, Mr. Carmichael, by his resignation, made a second vacancy. The office of consultant he retained until his death, and as such gave regularly every winter, when his health permitted, clinical lectures on his

(*a*) Vol. xi. p. 380.

favourite subjects,—scrofula, cancerous diseases, and syphilis ; on the latter disease he gave a regular course in the winter session of 1848–9, the one before his death.

In 1826 Mr. Carmichael, in conjunction with Mr. Adams and the late Mr. M'Dowell, founded the School of Medicine which now bears his name, but which attained the high character it so deservedly acquired as the Richmond School. He lectured on surgery in it, the introductory lecture to the first course of which he gave on the 8th of January, 1827; he also opened the school with an introductory address at the commencement of the second session, both of which lectures were published. But he ceased to be connected with the school as a proprietor after two years, not liking the restraint imposed on his style and matter by the shackles of a systematic course of lectures; he, however, lectured afterwards occasionally for many years on his favourite clinical topics, on stricture, and on the operative department of surgery. For the last eight years of his life he gave £50 annually to the school, to be distributed in premiums amongst the students, and by his will he has left £2000, as a premium fund, for the same purpose, the yearly interest of which is to be thus disposed of. We may here mention, also, as one of his acts of professional liberality, his bequest of £8000, under certain regulations, for the improvement of this school of medicine.

Very early in life Mr. Carmichael attained a high position, and filled important offices, in the Royal College of Surgeons in Ireland. In 1808, when only in his twenty-seventh year, he was one of the censors, and a member of the Court of Examiners; and in 1813, but ten years after he settled as a practitioner in Dublin, he was elected President; and to this high office he was twice subsequently nominated, namely, in 1826 and 1846.

We have already glanced at some of his many publications(*a*);

(*a*) The following is, we believe, a complete list of Mr. Carmichael's writings :—

1805. Case of Strictures in the Urethra removed by the Caustic Bougie, with an Account of the Appearances on Dissection Eighteen Years afterwards. Edinburgh Medical and Surgical Journal, vol. i.

1806. An Essay on the Effects of Carbonate of Iron upon Cancer, with an Inquiry into the Nature of that Disease. One volume, 8vo.

1807. Observations on the Effects of the Preparations of Iron in Cancer. Dublin Medical and Physical Essays, vol. i.

1807. Observations on Cataract and Strabismus. Dublin Medical and Physical Essays, vol. i.

1807. On the Opacity of the Cornea. Dublin Medical and Physical Essays, vol. i.

1808. A Case of Strangulated Femoral Hernia, with Observations. Dublin Medical and Physical Essays, vol. ii.

1809. Observations on Anchylosis. Edinburgh Medical and Surgical Journal, vol. v. p. 185.

1809. Second Edition of Essay on Cancer.

1810. Essay on the Nature of Scrofula, with Evidence of its Origin from Disorder of the Digestive Organs, illustrated by a Number of Cases successfully treated, and interspersed with Observations on the general Treatment of Children. One volume, 8vo.

they were chiefly restricted to purely practical subjects in medicine or surgery; but for many years before his death he turned much of his attention to the question of medical reform, and wrote some essays on it. In his published lectures, already referred to, he expressed very strong opinions against the apprenticeship system, which then formed a necessary part of the education of candidates for the diploma of the Irish College of Surgeons. No matter what our sentiments may be as to the results which have followed from the repeal of the by-laws on this subject that then existed, we cannot avoid expressing our belief, that it was to the agitation carried on by Mr. Carmichael this change must be ascribed. He also entertained very decided views on many questions connected with medical politics and medical ethics; these he always expressed openly and fearlessly, regarding not the effects which such a line of proceeding might have on his own professional interests; in this respect, at least, showing a noble example of firmness of character, for which, indeed, he was remarkable in both public and private life. We are not, in this brief memoir, about to enter on the stormy sea of medical politics, nor do we wish to revive the angry feelings which the discussion of these matters so frequently gave rise to, but, in justice to his memory, we

1814. An Essay on the Venereal Diseases which have been confounded with Syphilis, and the Symptoms which exclusively arise from that Poison, illustrated by Drawings of the cutaneous Eruptions of true Syphilis and the resembling Diseases. One volume, 4to.

1815. Letter in reply to the Reviewer of the above Essays, to the Editor of the Edinburgh Medical and Surgical Journal. Edinburgh Medical and Surgical Journal, vol. xi. p. 431.

1818. An Account of the Extirpation of a Tumour of the Neck, engaging the Parotid Gland. Transactions of the Royal College of Physicians of Ireland, vol. ii. p. 101.

1818. Observations on Varix and Varicose Inflammation. Transactions of the Royal College of Physicians of Ireland, vol. ii.

1818. Case of Incurable Disease of the Arm, arising from extraordinary Circumstances. Transactions of the Royal College of Physicians of Ireland, vol. ii.

1818. Observations on the Symptoms and specific Distinctions of Venereal Diseases, interspersed with Hints for the more effectual Prosecution of the present Inquiry into the Use and Abuses of Mercury in their Treatment. One volume, 8vo.

1819. Case of Amputation at the Hip-Joint, for the Removal of an Osteo-sarcomatous Tumour. Transactions of the Royal College of Physicians of Ireland, vol. iii.

1819. Account of a Case of Cynanche Laryngea, in which the Operation of Tracheotomy was performed with Success; and a Case of Abscess between the Œsophagus and Cervical Vertebræ, obstructing Deglutition in which the same Operation was unsuccessful; with Remarks on the appropriate Treatment of similar Cases. Transactions of the Royal College of Physicians of Ireland, vol. iii.

1822. Case of Strangulated Hernia, occasioned by a Double Stricture in a Sac of an Hour glass Shape. Dublin Hospital Reports, vol. iii.

1824. Six Cases of Tetanus, accompanied by Observations on the leading Symptoms of that Disease, with the View of ascertaining its primary Seat, and most appropriate Mode of Treatment. Transactions of the College of Physicians of Ireland, vol. iv.

must state our conviction, that he never permitted selfish feelings to influence him in his actions. This we shall enter into no arguments to prove ; but that love for his profession, and a desire for its improvement, were his ruling motives, the following extract from his will, relating to his noble bequest to the Royal College of Surgeons of Ireland, will sufficiently show :

" In my will, dated the 11th of February, 1849, I bequeathed £3000 to the College of Surgeons in Ireland, the interest arising from which sum is to be disposed of in the following manner:

" Every fourth year, after the investment of this sum in the funds of the College, a premium of £200, to be adjudged by the council of the College for the best essay, and £100 for the second best essay on the following subject:

" 1st. The state of the medical profession, in its different departments of physic, surgery, and pharmacy, in Great Britain and Ireland, at the time of the writing of these prize essays.

" 2nd. The state of the hospitals and schools of medicine, surgery, and pharmacy.

" 3rd. The state and mode of examination, or of testing the qualifications of candidates of the different licensing colleges or corporations in medicine, surgery, and pharmacy.

1825. Second Edition of the Essay on Venereal Diseases, and the Uses and Abuses of Mercury. 8vo.

1832. Observations on the Use of Tracheotomy in chronic Diseases of the Larynx, illustrated by Cases. Dublin Journal of Medicine, vol. ii.

1833. On Inflammatory Affections of the Brain and its Membranes. Dublin Journal of Medicine, vol. iv.

1833. Account of an Operation for securing the Gluteal Artery. Dublin Journal of Medicine, vol. iv.

1836. An Essay on the Origin and Nature of Tuberculous and Cancerous Diseases. Read to the Medical Section of the British Association, August 23, 1836.

1837. Observations on Mr. Colles' Practical Observations on the Venereal Disease and the Use of Mercury. Dublin Medical Journal, vol. xii.

1838. Observations on Sciatica and other Neuralgic Affections, with a consideration of their frequent origin from a disordered State of the Stomach, interspersed with some novel views respecting the Origin of Gall-stones. Both Diseases exemplified by the Author's own Case, together with an Account of the Waters of Bagnères de Bigorre and Barége in their treatment. Dublin Medical Journal, vol. xiii.

1838. Summary of Mr. Carmichael's Views of the Venereal Cases in which Mercury is admissible and is not admissible. Dublin Medical Journal, vol. xiii.

1840. Observations on a Point of some Importance in Medical Ethics. Medical Press, July 22, 1840.

1840. Letter canvassing the Merits and Demerits of Mr. Warburton's Bill on Medical Reform. Medical Press, November, 18, 1840.

1841. Letter to Sir Robert Peel, on a Plan of Medical Reform and Reorganization of the Medical Profession, without subverting the existing Colleges of Physic and Surgery. 8vo.

1842. Clinical Lectures on Venereal Diseases, delivered in 1840, by Richard Carmichael, and reported by Samuel Gordon. Revised by Richard Carmichael. Illustrated by Engravings of the different Forms of Eruption. 1 vol. 8vo.

"Under these three heads the authors will please to make such suggestions as may occur to them respecting the improvement of the profession, with the view of rendering it more useful to the public, and a more respectable body than it is at present. In these suggestions the authors will please to consider the preliminary and moral education of medical and surgical students, as well as the best mode of conducting their professional studies. In considering the third head, or mode of testing the qualifications of candidates by the licensing bodies, the authors will please to consider the most practicable mode of rendering the examinations as demonstrative as possible, i.e. in anatomy, by having the dead subject placed before the candidate; in chemistry, botany, and pharmacy, specimens of minerals, plants, and pharmaceutical preparations placed before him; and, in the practice of physic and surgery, the candidate to be placed before the patients in the wards of an hospital, as the testator is certain that this will afford the most certain and only true mode of ascertaining the qualification of candidates.

"The Council of the College (if they agree to act on this proposal) will please to give one year's notice in the public papers and medical journals; and that all competitors for the prizes offered shall send in their essays three months before the day (the first Monday in May every fourth year); upon which day the Council shall pronounce their judgment. The name and address of each author, with a device corresponding to that on his essay, to be enclosed in a sealed letter, in the manner usually adopted for all prize questions.

"The successful essays, or (if too long) portions of them, to be read to the assembled College, at which meeting its licentiates, and all medical students, shall be permitted to attend.

"Should the Council not deem any of the essays worthy of a reward, they are at liberty and authorized to postpone the grant of premium until the termination of the next four years; and, as at this period the interest of the capital will be doubled, the reward of the two best essays may also be doubled, i.e. £400 for the best, and £200 for the second best.

"On handing the sum mentioned, of £3000, to the College, my trustees will please to have a legal guarantee that the provisions above stated will be carried into effect, as well as the publication of both of the prize essays, to the extent each of 700 copies, to be disposed of in the following manner:—Copies to be sent, free of expense, to the presidents, vice-presidents, councillors, or governing members of all the medical colleges or corporations of the United Kingdom; the authors of the successful essays to be entitled to twenty-five copies each; the remainder to be sold, the produce of which to go to the premium fund. Copies should also be sent to all cabinet ministers and members of the Privy Council in both countries.

"Should the Council neglect to comply with the above provisions, so as not to carry into effect the object and spirit of the testator in making this bequest, it is his will and pleasure that the interest thus accumulated shall be handed to the Medical Benevolent Fund

of Ireland; and his trustees will take especial care that, on giving the principal sum to the College, legal provision shall be made to carry this arrangement into effect."

The enthusiasm by which Mr. Carmichael was characterized in the pursuit of any object that he undertook throughout his life was especially manifested in the question of medical reform. He may be said to have formed the Medical Association of Ireland, a congress of physicians and surgeons, founded to promote the attainment of the alterations in the profession that he sought for. In 1839 he addressed the members of it, as their President, setting forth the views he held; and in 1840 he placed £500 at the disposal of the Council of the Association for the furtherance of these views. No part of this donation was expended by that body, and on its dissolution he presented the entire sum to the Medical Benevolent Fund Society of Ireland. This princely act of charity,—a charity that in him "vaunted not itself, and was not puffed up,"—was, at the time, of the utmost value to the Society, then in its infancy, enabling it almost immediately afterwards, "to commence the long-wished-for and interesting work of administering to the necessities of those for whose use the Society was established." At the next meeting of the Society, which was held on the 7th of June, 1847, the following resolution was passed:—"That the cordial thanks of this meeting, and of the Society at large, are justly due, and are hereby given, to Richard Carmichael, Esq., for his munificent donation of £500." He not only helped to progress this most important and benevolent Society(*a*) with his purse, but from its very foundation he devoted much of his time to it, having been, from the first, an active member of the committee; and his last public act was to preside at the annual meeting of the Society, held but a short month before his death. Moreover, it may be truly said that his benevolence to it did not cease with his life, for by his will he bequeathed to it the sum of £4500, thus placing the Society above any fear of failure in the noble objects for which it was instituted.

In the year 1812 Mr. Carmichael became a member of the Royal Irish Academy, and in 1820 was elected to serve on the Council as a member of the Committee of Science, on which he remained for

(*a*) We feel that we should be guilty of a dereliction of duty, were we to allow any opportunity to pass without endeavouring to impress upon our large body of subscribers the claims which the Medical Benevolent Fund Society of Ireland has upon them. It would be out of place for us to say anything of the truly charitable feelings for which our profession has been, in all ages, so remarkable. And this is a truly charitable institution, calling on the profession for aid; truly charitable we say, for its bounty is freely bestowed, without any preference for those who may have been subscribers to its funds. At present we shall merely call their notice to the bright example set them by the subject of the Memoir to which this note is appended, and say, let each, as far as his means permit him, fulfil the scriptural precept, "go and do likewise."

several years, until his increasing professional practice no longer permitted him to attend to its duties. He was also a member of the Royal Dublin Society. In February, 1835, he received the high honour of being nominated a Corresponding Member of the Royal Academy of Medicine of France; a distinction conferred on but few foreigners, and those few invariably selected from the most celebrated medical men in each country. We believe that he was the first Irishman who was thus distinguished.

Twice, during his career, Mr. Carmichael was presented with addresses by his professional brethren. On the first occasion, which was in 1841, the address, which was signed by 410 physicians and surgeons, was accompanied by a piece of plate. This remarkable proof of the esteem in which he was held by those who had the best right to know him was called forth by his gift of £500 to the Medical Association of Ireland, to which we have before alluded; it expressed their feelings of his untiring zeal and devotion in the advancement not only of the scientific but of the general interests of his profession. The second address was presented to him on the 20th of June, 1846, at the termination of his Presidentship, for the third time, of the Royal College of Surgeons of Ireland; it was signed by 114 Fellows and Licentiates of the College, resident in Dublin, and was intended to mark "their estimation of the dignified, zealous, and able manner in which he discharged the important duties of President of the College; his unceasing exertions in promoting the best interests of the profession, and the kind encouragement which he on every occasion extended towards its junior members." In his reply to this address Mr. Carmichael announced an important step, as regarded his private practice for the future, which he had decided upon taking. This step, almost unexampled for its liberality, he announced in the following words:—"Since the termination of my year of Presidentship of the College (the third time I have had that honour), I have relinquished all practice, except in my own house, or out of doors in consultation with a qualified practitioner. This determination has in a great measure arisen from a wish to show a good example to my contemporaries, which I trust will in due time be followed for the benefit of their juniors."

Mr. Carmichael generally enjoyed excellent health, having had a naturally sound constitution, which his love for horse exercise tended to keep unimpaired. But for nearly two years, from 1827 to 1829, he suffered much from gastric derangements, gall-stones, and sciatica; until at length, in June of the latter year, he was compelled to leave Dublin, and proceed to the south of France, where he resided for a month at Bagnères de Bigorre, and for six weeks at the baths of Barège: he afterwards took a tour on horseback through the valleys of the Pyrenees, and returned home quite restored to health(*a*). From this time he continued uninterruptedly

(*a*) See his essay on the symptoms of his own case in the Dublin Journal of Medicine, vol. xiii. p. 286.

in the active exercise of his profession until the very day in which his life was so suddenly terminated. For many years he had been in the habit of residing with his family during the summer months at a country residence, selecting some place in the neighbourhood of Dublin sufficiently near to town to permit him to ride into his business in the morning, and again return on horseback in the afternoon, after his day's work was over. In the year 1849 he chose for this purpose a residence near the small village of Sutton, on the south side of the Hill of Howth, about seven miles from town by the road. The back waters of the Liffey and the river Tolka meet near here, and this portion of the Hill is separated from the Dublin shore, beyond Clontarf, by a long strand about half a mile in width, which lies behind an elevated bank called the North Bull; this strand, together with the Bull, is completely covered by the tide at high water, but is left nearly dry when the tide is out, so that were it practicable to cross it, the distance from town would be shortened by nearly two miles; but a rapid stream, from six to twelve feet deep, even at low water, throughout the greater part of its course, flows across it less than a quarter of a mile distant from the Sutton shore. In this stream, on the 8th of June, 1849, Mr. Carmichael was drowned.

The exact particulars of the manner in which he met his death have not been ascertained; but the following account, which is partly based on the testimony of two persons who witnessed the accident from a short distance, is believed by his family to be correct. On this evening he was detained in town until half past six o'clock, being somewhat later than his usual hour; and anxious, as it is conjectured, to shorten the distance, he attempted to ride across the strand. Having reached the bank of the stream, being a bold horseman and a good swimmer, and probably not aware of its depth, for it is very deceptive to the eye at the side at which he entered, he urged his horse onwards. The stream increases in depth, very gradually at first, but at the distance of about two perches from the bank it abruptly becomes from four to five feet deep. It is believed that the horse fell suddenly down this bank, and probably while in the act of falling struck Mr. Carmichael so as to stun him, for it would appear from the evidence of one of the witnesses examined at the inquest, and who reached the spot in about five minutes after the accident occurred, that he never rose to the surface. The body was not found until the fifth day afterwards, when it was discovered by fishermen who were looking for it, close to the spot where the accident occurred.

Thus was one of the most distinguished surgeons of our age cut off in a moment, though not in the midst of his career, for he lived the three score years and ten of man's allotted time in this world, yet while in the enjoyment of robust health, with his mind as active, and his hand as firm, as they had ever been. Of this we can ourselves bear testimony, for we happened to be in attendance with

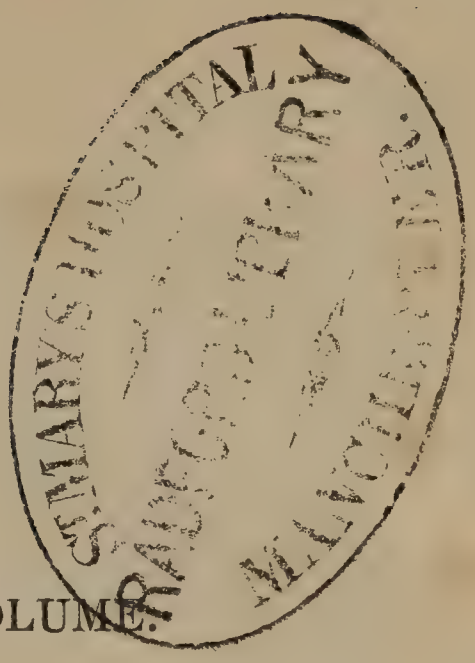
him at the last operation he performed in private, the very day three weeks before his death(*a*).

To the biographical Memoir of such a man as Richard Carmichael we shall not append the high-flown language so commonly employed, like inscriptions on a monumental tablet, to adorn a character, it may be deservedly or not. We prefer to let a man's life be judged of by his actions, and *his* works speak for themselves. LIVING HE ADORNED HIS PROFESSION, AND DYING HE WAS NOT FORGETFUL OF IT.

(*a*) The following letter of condolence was addressed to his widow by the College of Physicians of Ireland:

"MADAM,—We, the President and Fellows of the King and Queen's College of Physicians, beg to tender you our condolence on the late deplorable event which has deprived the surgical profession of one of its most distinguished members; and we trust that, although Mr. Carmichael was unconnected with our body, you will accept this expression of our heartfelt sorrow for your loss, and our high estimation of his private and professional worth.

"Mrs. Carmichael."



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